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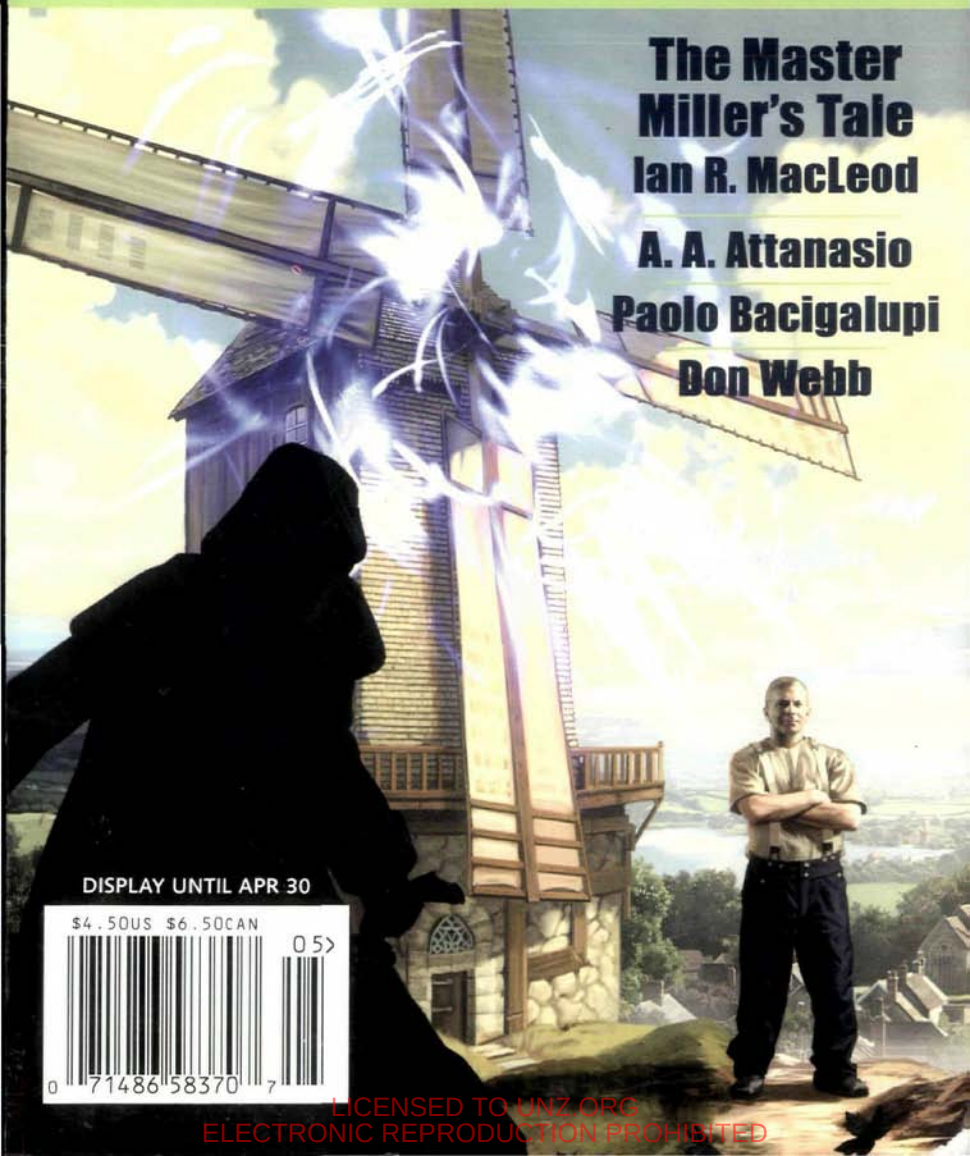

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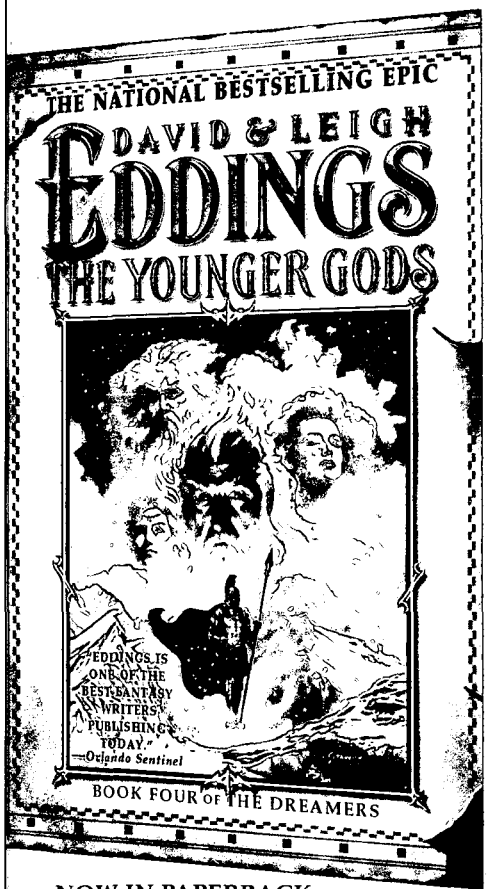
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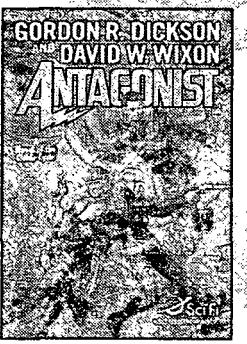

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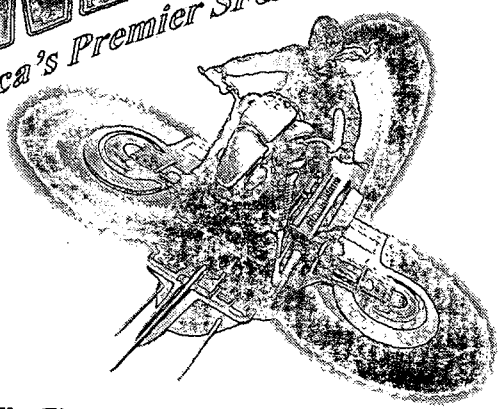

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Ian MacLeod contributed a number of memorable stories to our magazine in the 1990s, including "Verglas," "The Noonsday Pool," and "Tirkiluk," but nearly a decade has passed since his last appearance in F&SF. *Which is not to suggest he has been idle; as detailed at* www.ianrmacleod.com, *he has published* The Great Wheel, The Summer Isles, The Light Ages, *and* The House of Storms *over the last ten years. (And a new story collection entitled* Past Magic *has just been published this year.)*

This new story, which marks his welcome return to our pages, is set in the same alternate world as that of The Light Ages, *but it takes a different approach and you need not be familiar with the novel to enjoy the story.*

The Master Miller's Tale

By Ian R. MacLeod

THERE ARE ONLY RUINS left now on Burlish Hill, a rough circle of stones. The track that once curved up from the village of Stagsby in the valley below is little more than an indentation in the grass, and the sails of the mill that once turned there are forgotten. Time has moved on, and lives have moved with it. Only the wind remains.

Once, the Westovers were millers. They belonged to their mill as much as it belonged to them, and Burlish Hill was so strongly associated with their trade that the words *mill* and *hill* grew blurred in the local dialect until the two became the same. Hill was mill and mill was hill, and one or other of the Westovers, either father or son, was in charge of those turning sails, and that was all the people of Stagsby, and all the workers in the surrounding farms and smallholdings, cared to know. The mill itself, with its four sides of sloped, slatted wood, weather-bleached and limed until they were almost paler than its sails, was of the type known as a post mill. Its upper body, shoulders, middle and skirts, turned about a central pivot from a squat, stone lower floor to meet whichever wind

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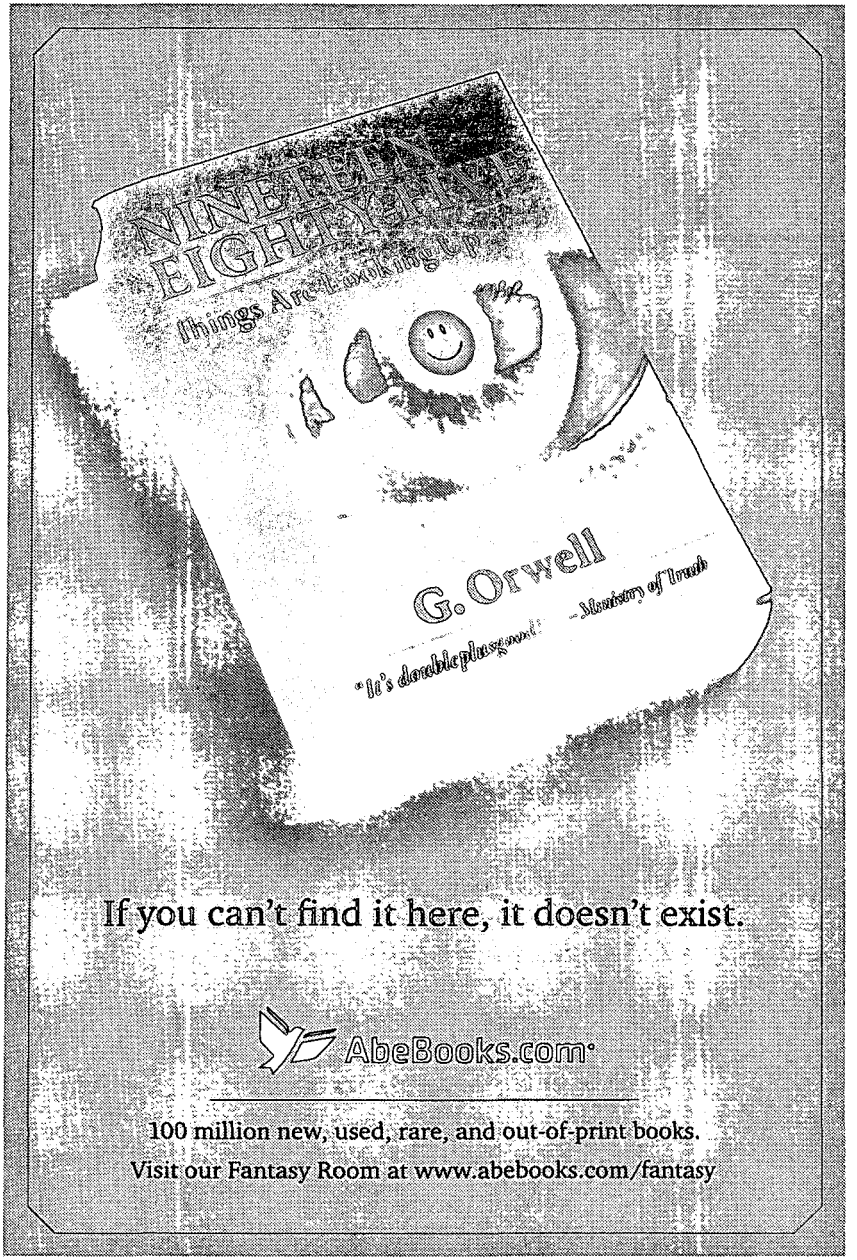

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prevailed. There was a tower mill at Alford, and there were overshot water mills at Lough and Screamby, but Burlish Mill on Burlish Hill had long served its purpose. You might get better rates farther afield, but balanced against that had to be the extra journey time, and the tolls on the roads, and the fact that this was Stagsby, and the Westovers had been the millers here for as long as anyone could remember. Generation on generation, the Westovers recemented this relationship by marrying the daughters of the farmers who drove their carts up Burlish Hill, whilst any spare Westovers took to laboring some of the many thousands of acres that the mill surveyed. The Westovers were pale-faced men with sandy hair, plump arms and close-set eyes which, in their near-translucence, seemed to have absorbed something of the sky of their hilltop home. They went bald early — people joked that the winds had blown away their hair — and worked hard, and characteristically saved their breath and said little, and saved their energies for their work.

Although it took him most of his life to know it, Nathan Westover was the last of the master millers on Burlish Hill. Growing up, he never imagined that anything could change. The endless grinding, mumbling sound of the mill in motion was always there, deep within his bones.

He was set to watch a pulley that was threatening to slip.

"See how it sits, and that band of metal helps keep it in place...," his mother, who often saw to the lesser workings of the mill, explained. "It's been doing that for longer than I and your father can remember. Now it's getting near the end of its life..." The pulley turned, the flour hissed, the windmill rumbled, and this small roller spun on in a slightly stuttering way. "...and we can't stop the mill from working when we're this busy just to get it fixed. So we need someone to keep watch — well, more than simply watch — over it. I want you to sing to that roller to help keep this pulley turning and in place. Do you understand?"

Nathan nodded, for the windmill was always chanting its spells from somewhere down in its deep-throated, many-rumbling voice, and now his mother took up a small part of the song in her own soft voice, her lips shaping the phrases of a machine vocabulary, and he joined in, and the roller and the pulley's entire mechanism revolved more easily.

Soon, Nathan was performing more and more of these duties. He even

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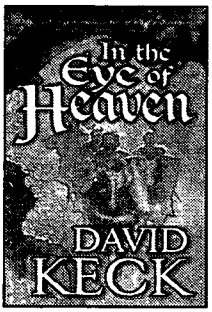
"Gritty[1], important[2], erudite[3]." NEW FROM TOR



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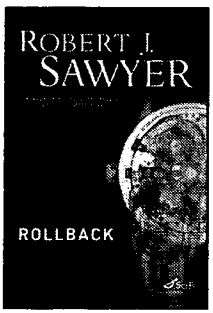

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learned how to sing some of the larger spells that kept the mill turning, and then grew strong enough to lift a full sack of grain. He worked the winches, damped the grist, swept the chutes, oiled the workings. He loved the elegant way in which the mill always rebalanced itself through weights, lengths, numbers, quantities. Fifteen men to dig a pit thus wide down at school in the village meant nothing to him, but he solved problems that had anything to do with grain, flour, or especially the wind, in his dreams.

Sometimes there were visits from the rotund men who represented the county branch of the Millers' Guild. On these occasions, everything about the mill had to be just so — the books up to date, the upper floors brushed and the lower ones waxed and the sails washed and all the ironwork shiny black as new boots — but Nathan soon learned that these men liked the mill to be chocked, braked and disengaged, brought to a total stop. To them, it was a dead thing within a frozen sky, and he began to feel the same contempt for his so-called guild-masters that any self-respecting miller felt.

On the mill's third floor, above the account books with their pots of green and red ink, and set back in a barred recess, leaned a three-volume Thesaurus of spells. One quiet day at the end of the spring rush when sails ticked and turned themselves in slow, easy sweeps, his father lifted the heavy boots down, and blew off a coating of the same pale dust which, no matter how often things were swept and aired, soon settled on everything within the mill.

"This, son...." He cleared his throat. "Well, you already know what these are. One day, these books will be yours. In a way, I suppose they already are...."

The yellowed pages rippled and snickered. Just like the mill itself, they didn't seem capable of remaining entirely still, and were inscribed with the same phonetic code that Nathan saw stamped, carved or engraved on its beams, spars and mechanisms. There were diagrams. Handwritten annotations. Darker smudges and creases lay where a particularly useful spell had been thumbed many times. Through the mill's hazy light, Nathan breathed it all in. Here were those first phrases his mother had taught him when he tended that pulley, and the longer and more complex melodies that would keep back those four apocalyptic demons of the milling industry, which were: weevils, woodworm, fire, and rats. As

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always with things pertaining to the mill, Nathan felt that he was rediscovering something he already knew.

THERE WERE slack times and there were busy times. Late August, when the farmers were anxious to get their summer wheat ground and bagged, and when the weather was often cloudless and still, was one of the worst. It was on such late, hot, airless days, with the land spread trembling and brown to every cloudless horizon, and the mill whispering and creaking in dry gasps, that the wind-seller sometimes came to Burlish Hill.

Nathan's father would already be standing and waiting, his arms folded and his fists bunched as he watched a solitary figure emerge from the faded shimmer of the valley. The wind-seller was small and dark, and gauntly pale. He wore creaking boots, and was wrapped in a cloak of a shade of gray almost as thunderous as that of the sack he carried over his thin shoulders, within which he bore his collection of winds.

"So this'll be the next one, eh?" He peered forward to study Nathan with eyes that didn't seem to blink, and Nathan found himself frozen and speechless until his father's hand drew him away.

"Just stick to business, wind-seller, shall we?"

It was plain that his father didn't particularly like this man. After all, every miller worth his salt prided himself on making the best of every kind of weather, come storm or calm, glut or shortage. Still, as the wind-seller unshouldered his sack and tipped out a spill of frayed knots, and especially on such a hot and hopeless day as this, it was impossible not to want to lean forward, not to want to breathe and feel and touch.

"Here, try this one...." Spidery fingers rummaged with a hissing, whispering pile to extract the gray strands of what looked, Nathan thought, exactly like the kind of dirty sheep's wool you saw snagged and fluttering on a bare hedge on the darkest of winter days. "...That's a new, fresh wind from the east. Cut through this summer fug clean as a whistle. Sharp as a lemon, and twice as sweet. Delicate, yes, but good and strong as well. Turn these sails easy as ninepence."

Already, Nathan could taste the wind, feel it writhing and alive. Slowly, reluctantly, his father took the strand in his own hands, and the wind-seller's mouth twitched into something that was neither a smile nor

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a grin. "And this one.... Now *this* will really get things going. Tail end of a storm, tail end of night, tail end of winter. Can really feel a bite of frost in there, can't you? 'Course, she's a bit capricious, but she's strong as well, and cool and fresh...."

It was nothing but some bits of old willow bark, torn loose in a storm and dampened by trembling puddles, but already the windmill's sails gave a yearning creak. Nathan's father might grumble and shake his head, but the haggling that followed all of this conspicuous advertisement was always disappointingly brief. They all knew, had known since before the wind-seller's shape had first untwisted itself from the haze of the valley, that — strange things though they were, the knotted breath of forgotten days — he would have to buy his share of these winds.

Although no one else believed them, master millers swore they could taste the flavor of the particular wind from which any batch of flour had been turned. The weather prevails from the east on Burlish Hill, unrolling with a tang of salt and sea-brightness from the blustery North Sea, but no wind is ever the same, and every moment of every day in which it blows is different, and setting the mill to just the right angle to take it was, to Nathan's mind, the greatest skill a master miller possessed. Even as you sang to your mill and anchored it down, it responded and took up the ever-changing moods of the wind in her sails. But the feelings and flavors that came from the wind-seller's winds were different again. On dead, dry afternoons when the sky was hard as beaten pewter, Nathan's father would finally give up whatever makeweight task he was performing and grumblingly go to unlock the lean-to at the mill's back where he kept the wind-seller's winds.

The things looked as ragged now as they had when they fell from the wind-seller's sack — nothing more than dangling bits of old sea-rope, the tangled vines of some dried-up autumn, the tattered remains of long-forgotten washing — but each was knotted using complex magics, and what else were they to do, on such a day as this? Already writhing and snapping around them — a gray presence, half felt, half seen, and straining to be released — was the longed-for presence of some kind of wind. Up in the creaking stillness of the main millstone floor, and with a shine in his eyes that spoke somehow both of expectation and defeat, his father would

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break apart the knot with his big miller's hands, and, in a shouting rush, the wind that it contained would be released. Instantly, like the opening of an invisible door, the atmosphere within the mill was transformed. Beams creaked in the changed air and the sails swayed, inching at first as the main axle bit the breakwheel and the breakwheel bore down against the wallower that transported the wind's gathering breath down through all the levels of the mill. The farther sky, the whole spreading world, might remain trapped in the same airless day. But the dry grass on Burlish Hill shifted and silvered, and the mill signaled to every other hilltop that at least here, here on this of all days, there was enough wind to turn its sails.

The winds themselves were often awkward and capricous things; unseasonably hot and dry, awkwardly damp and gray. They seemed to come, in that they came from anywhere at all, from points of the compass that lay beyond north and south, east or west. Even as Nathan and his father began gladly heaving the contents of all the waiting sacks into the chutes, the atmosphere within the mill on those days remained strange. Looking out though the turning sails, Nathan half expected to see changed horizons; to find the world retilted in some odd and awkward way. Lying in his bunk in the still nights afterward when the winds had blown themselves out, he pictured the wind-seller wandering the gray countrysides of some land of perpetual autumn, furtively gathering and knotting the lost pickings of a storm with those strange agile fingers, muttering as he did so his spells over rags and twigs.

The other children at the school down in the village — the sons and daughters of farmers, carpenters, laborers, shopkeepers, who would soon take up or marry into the same trade — had always been an ordinary lot. Perhaps Fiona Smith should have stood out more, as Nathan often reflected afterward, but she was mostly just one of the girls who happened to sit near the back of class, and seemed, in her languorous demeanor, to be on the verge of some unspecified act of bad behavior that she could never quite summon the energy to perform. Nevertheless, she could hold her own in a fight and throw an accurate enough stone, at least for a girl. If he'd bothered to think about it, Nathan would have also known that Fiona Smith lived at Stagsby Hall, a structure far bigger and more set-apart

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than any other in the village, which had a lake beside it that flashed with the changing sky when you looked down at it from Burlish Hill, but he envied no one the size of their homes; not when he had all of Lincolnshire spread beneath him, and lived in a creaking, turning, breathing mill.

He was surprised at the fuss his parents made when an invitation came for the Westovers and seemingly every other person in Stagsby to attend a party to celebrate Fiona Smith's fourteenth birthday, and at the fussy clothes they found to wear. As they walked on the appointed afternoon toward the open gates of Stagsby Hall, he resented the chafe of his own new collar, the pinch of the boots, and the waste of a decent southerly wind.

It was somewhat interesting, Nathan might have grudgingly admitted, to see such an impressive residence at close hand instead of looking at it from above. Lawns spread green and huge from its many golden windows toward a dark spread of woods, and that lake, which, even down here, reflected the near-cloudless sky in its blue gaze. There were indecently underdressed statues, and there were pathways that meandered amongst them with a will of their own. Of greater importance, though, to Nathan and most of the other villagers, was the food. There was so much of it! There were jellies and sausages. Cheeses and trifles. Cakes and roast meats. There were lurid cordials, sweet wines and varieties of ale. Sticky fingered, crusty faced, the younger children took quarreling turns to pin the tail on a blackboard donkey, and those of Nathan's age soon lost their superiority and joined in, whilst the adults clustered in equal excitement around the beer tent. There was also a real donkey, saddled and beribboned and ready to be ridden. But the donkey whinnied and galloped as people attempted to catch it, kicking over a food-laden table and sending a mass of trifles, jellies, and cakes sliding to the grass in a glistening heap. The adults laughed and the children whooped as the donkey careered off toward the trees, watched by the stiff-faced men and women in tight black suits, whom, Nathan had divined by now, were the servants of Stagsby Hall.

The afternoon — for the villagers, at least — passed in a timeless, happy whirl. Much beer and wine was drunk, and the children's livid cordials seemed equally intoxicating. Trees were climbed; many by those old enough to know better. Stones, and a few of the silver trays, were

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skimmed across the lake. Then, yet more food was borne out from the house in the shape of an almost impossibly large and many-tiered cake. The huge creation was set down in the shade of one of the largest of the oaks that circled the lawns. Nodding, nudging, murmuring, the villagers clustered around it. The thing was ornamented with scrolls and flowers, pillared like a cathedral, then spired with fourteen candles, each of which the servants now solemnly lit.

An even deeper sigh than that which had signaled the lighting of the cake passed through the crowd as Fiona Smith emerged into the space that had formed around it. Nathan hadn't consciously noticed her presence before that moment. Now that he had, though, he was immensely struck by it. He and many of his classmates were already taller and stronger than the parents whose guilds they would soon be joining. Some were already pairing off and *walking the lane together*, as the local phrase went, and even Nathan had noticed that some of the girls were no longer merely girls. But none of them had ever looked anything remotely like Fiona Smith did today.

Although the dress she wore was similar in style to those many of the other women were wearing, it was cut from a substance that made it hard to divine its exact color, such was its shimmer and blaze. Her thick red hair, which Nathan previously dimly remembered as tied back in a ponytail, fell loose around her shoulders, and also possessed a fiery glow. It was as if an entirely different Fiona Smith had suddenly emerged before this cake, and the candle flames seemed to flare as though drawn by an invisible wind even before she had puffed out her cheeks. Then she blew, and all but one of them flattened and died, and their embers sent up thirteen trails of smoke. Smiling, she reached forward as if to pinch out the last remaining flame. But as she raised her hand from it, the flame still flickered there, held like a blazing needle between her finger and thumb. Then, with a click of her fingers, it was gone. The entire oak tree gave a shudder in the spell's aftermath and a few dry leaves and flakes of bark drifted down, some settling on the cake. The villagers were already wandering back across the lawn, muttering and shaking their heads, as the servants began to slice the object up into spongy yellow slices. They were unimpressed by such unwanted displays of guild magic, and by then, no one was feeling particularly hungry.

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Without understanding quite how it had happened, Nathan found that he and Fiona Smith were standing alone beside the remains of the cake.

"You're from up there, aren't you?" She nodded through the boughs toward the mill. "Bet you'd rather be there now, eh, with the sails turning? Instead of down here watching a good day go to waste."

Although it was something he wouldn't have readily admitted, Nathan found himself nodding. "It was clever," he said, "what you did with that cake."

She laughed. "All those faces, the way they were staring! I felt I had to do something or I'd explode. Tell you what, why don't we go and have a look at your mill?"

Nathan shifted his feet. "I'm not sure. My father doesn't like strangers hanging around working machinery and it's your birthday party and — "

"I suppose you're right. Tell you what, there's some of my stuff I can show you instead."

Dumbly, Nathan followed Fiona Smith up toward the many-windowed house, and then through a studded door. The air inside was close and warm, and there were more rooms than he could count, or anyone could possibly want to live in, although most of the furniture was covered in sheets. It was as if the whole place had been trapped in some hot and dusty snowfall.

"Here." Fiona creaked open a set of double doors. The room beyond had a high blue ceiling, decorated with cherubs and many-pointed stars. "This...." She shook out a huge, crackling coffin of packaging that lay scattered amid many other things on the floor. "*This* is from Father. Ridiculous, isn't it?" A sprawled china corpse stared up at them with dead glass eyes. Nathan had always thought dolls ridiculous, although this one was big and impressive. "At least, I think it's from him. His handwriting's terrible and I can't read the note."

"Your father's not here?"

"Not a chance. He'll be in London at one of his clubs."

"London?"

"It's just another place, you know." Shrugging, Fiona aimed a kick at the doll. "And he's decided I can't stay here at school, either, or even in Stagsby. In fact, I'm sure he'd have decided that long ago if he'd

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remembered. That's why everyone's here today — and why I'm wearing this stupid dress. It's to remind you of who I'm supposed to be before I get dragged to some ridiculous academy for so-called young ladies."

Fiona crossed the room's considerable space toward the largest of all the sheeted objects which, as she tugged at its dusty coverings, revealed itself to be an enormous bed. Enameled birds fluttered up from its silken turrets as if struggling to join the room's starry sky. Nathan had seen smaller houses.

"This used to be Mother's bedroom. I'd come and just talk to her in here when she was ill from trying to have a son. Of course, it didn't work, so now my father's stuck with a girl for an heir unless he goes and gets married again, which he says will be when Hell freezes."

"All of this will end up as yours?"

Fiona gazed around, hands on hips. "I know what you're thinking, but my father says we're in debt up to our eyeballs. I'm sure that you Westovers have far more money than we Smiths, with that mill of yours. My grandfather, now, *he* was the clever one. Had a real business mind. He was a proper master smithy. He was high up in the guild, but he still knew how to work a forge. He used to show me things. How to stoke a furnace, the best spells for the strongest iron...."

"And that trick with the flame?"

Fiona looked at Nathan and smiled. Her eyes were a cool blue-green. He'd never felt such a giddy sense of sharing, not even when he was working hard at the mill. "I'll show you his old room," she murmured.

Up wide, white marble stairways, past more sheeted furniture and shuttered windows, the spaces narrowed. Nathan caught glimpses through windows of the lake, the lawns, Burlish Hill, and then the lake again as they climbed a corkscrew of stairs. Cramped and stuffed with books, papers, cabinets, the attic they finally reached was quite unlike the great rooms below. Fiona struggled with a shutter, flinging sunlight in a narrow blaze. Nathan squinted, blinked, and gave a volcanic sneeze.

She laughed. "You're even dustier than this room!"

Standing in this pillar of light, Nathan saw that he was, indeed, surrounded by a nebulous, floating haze. "It's not dust," he muttered. It was a sore point; the children at school often joked about his powdery aura. "It's flour."

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"I know." Something fluttered inside his chest as she reached forward to ruffle his hair, and more of the haze blurred around him. "But you're a master miller — or you will be. It's part of what you are. Now look."

After swiping a space clear on a sunlit table, Fiona creaked open the spines of books that were far bigger and stranger in their language than the mill's Thesaurus of spells. The same warm fingers that he could still feel tingling across his scalp now traveled amid the symbols and diagrams. Guilds kept their secrets, and he knew she shouldn't be showing him these things, but nevertheless he was drawn.

"This is how you temper iron.... This is an annealing spell, of which there are many...." A whisper of pages. "And here, these are the names for fire and flames. Some of them, anyway. For there's always something different every time you charge a furnace, put a spark to a fire, light a candle, even."

Nathan nodded. All of this was strange to him, but he understood enough to realize that flames were like the wind to Fiona Smith, and never stayed the same.

"Not that my father's interested. He likes to joke about how he got through his grandmaster exams just because of the family name. And I'm a woman, so there's no way I can become a smithy...." She grew quiet for a moment, the sunlight steaming in copper glints across her hair as she gazed down at the vortex of flame that filled the page.

"What'll you do instead?"

"I don't know." She looked up at him, fists balled on the table, her face ablaze. "That's the frustrating thing, Nathan. *These* of all times. All the old spells, you know, the stupid traditions, the mumbling and the superstitions and the charms and the antique ways of working, all of that's on the way out. Modern spells aren't about traditional craftsmen — not when you can mine the magic right out of the ground. That's what they're doing now, in places up north like Redhouse and Bracebridge, they're drawing it out of the solid earth almost like they extract coal or salt or tar or saltpeter."

Nathan nodded. He knew such things as mere facts, but he'd never heard anyone speak about them — or, indeed many other things — with such passion.

"I'm lucky. That's what my grandfather used to say. I'm lucky, to be

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living in this time." She shook her head and chuckled. "The future's all around us, just like the world you must be able to see from up on your hill. And this, now *this*...." She pushed aside the book, and took down a large and complex-looking mechanism from a shelf. "He made this himself as his apprentice piece."

It took up most of the table, and consisted of a variety of ceramic marbles set upon a complex-looking arrangement of arms and gears, all widely spaced around a larger and even brighter central orb that might have been made of silver, gold, or some yet more dazzling metal.

"It's an orerry — a model of the universe itself. These are the planets, this is the sun. These tiny beads are the major stars. See..." As she leaned forward, their blaze was reddened and brightened by the fall of her hair. "This is where we are, Nathan. You and I and everyone else, even the Hottentot heathens. This is our planet and it's called Earth...."

Nathan watched as her hands, her hair, fluttered from light to dark amid all this frail and beautiful machinery, and his thoughts, and his lungs and his heart and his stomach, fluttered with them. Although he had no great care for matters of philosophy, he couldn't help feeling that he was witnessing something exotic and forbidden in this strangely Godlike view of the universe that Fiona Smith was describing. But it was thrilling as well.

"Now watch."

Leaning down close to the table, afloat in sunlight, she puffed her cheeks and blew just as she had blown at her birthday cake. But now, smoothly, silently, the planets began to turn.

"You try."

She made a space and Nathan shuffled close. Then, as conscious of the warmth of Fiona's presence beside him as he was of the blaze of the sun, he bent down and he blew.

"Is that how it really works?"

She laughed. "You of all people, Nathan, up on that hill, should understand."

Silently, seemingly with a will of its own, in gleam and flash of planets and their wide-flung shadows, the orerry continued to spin. Nathan watched, willing the moment to continue, willing it never to stop. But, slowly, finally, it did. It felt as if some part of his head was still

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spinning as, dazed, he helped Fiona close the shutter and followed her back down the stairways and along the corridors of her huge house. Everything, the sheeted furniture, the hot air, seemed changed. Outside, even the sun was lower, and redder, and it threw strange, long shadows as it blazed across the lawn. The world, Nathan thought for one giddy moment, really has turned.

A SPACE OF DESK near the back of the class at the village school lay empty when Nathan and his classmates returned to school, although there was nothing particularly remarkable in that. Soon, they all were leaving, drawn into the lives, trades, and responsibilities for which they had always been destined, and Fiona Smith's birthday party, if it was remembered at all, was remembered mostly for the drink and the food.

The windmill up on Burlish Hill turned, and the seasons turned with it. More and more, Nathan was in charge, and he sang to the mill the complex spells that his father's voice could no longer carry. The only recreation he consciously took was in the choir at church. Opening his lungs to release the sweet, husky tenor that had developed with the stubble on his cheeks, looking up at the peeling saints and stars, it seemed to him that singing to God the Elder and singing to the mill were much the same thing. Instead of calling in at the pub afterward, or lingering on the green to play football, he hurried straight back up Burlish Hill, scanning the horizon as he did so.

He could always tell exactly how well the mill was grinding, and the type of grain that was being worked, merely from the turn of its sails, but there was a day as he climbed up the hill when something seemed inexplicably wrong. Certainly nothing as serious as a major gear slipping, but the sweep of the sails didn't quite match the sweet feel of the air. He broke into a run, calling to his mother as he climbed up through the stairs and ladders inside the mill. The main sacking floor was engulfed in a gray storm, with flour everywhere, and more and more of it sifting down the chutes. Hunched within these clouds, gasping in wracking breaths, Nathan's father was a weary ghost.

Feeble though he was, the miller resisted Nathan's and his mother's attempts to bear him out into the clear air. He kept muttering that *a miller*

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never leaves his mill, and struggled to see to the rest of the sacks before the wind gave, even though the batch was already ruined. Finally, though, they persuaded him to take to his bed, which lay on a higher floor of the mill, and he lay there for several days, half-conscious and half-delirious, calling out spells to his machine, which still creaked and turned between periodic, agonizing bouts of coughing.

As poor luck would have it, the winds then fell away. It grew hot as well. The skies seemed to slam themselves shut. Much more now for the sake of his father than for the mill itself, Nathan longed for a breeze. He searched for the hidden key to the lean-to, and he found it easily in a tin of nails; just the sort of place he'd never before have thought to look. The few knots left inside the small, close space hung like dried-up bats on their iron hooks, and part of Nathan felt that he had never seen anything so weathered and useless, and part of him already felt the strange, joyous surge of the winds that each clever knot contained. There were no spells in the miller's Thesaurus to tell him how to unbind a trapped wind, nor the sounds that he should make as he did it, but doing so came to him easily as laughing and crying as he stood on the millstone floor. The air changed in a clamor of groans. The mill's sails creaked and bit and turned. At last, there was work to be done, and Nathan got on with doing it with a happier heart. He knew without climbing the ladders that his father's breathing would be easier, now that the mill was working properly all around him once again.

Although he was too exhausted to make use of it, Nathan released another wind at twilight purely for the glory of feeling the pull and draft of it through all the mill's leaky slats and floors. More than usually, this one lived up to the wind-seller's tales of bright spring mornings and the shift of grass over cloud-chased hills. When Nathan finally climbed the ladders to see his father, his mother — who had sat all day beside him — was smiling through her tears. He took the old man's hand and felt its hot lightness, and the calluses that years of handling sacks and winches had formed, and the smooth soft gritting of flour that coated every miller's flesh, and he smiled and he cried as well. They sat through the old man's last night together, breathing the moods of the mill, watching the turn of the stars through the hissing swoop of its sails.

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Nathan's mother went to live in an old warehouse beside the dunes at Donna Nook, which had once stored southern hops before the channels had silted up. He visited her there on saints' days, taking the early milk wagon and walking the last miles across the salt flats. Although she was wheezy herself now, and easily grew tired, she seemed happy enough there spending her days talking of brighter, breezier hours, and better harvests, to the widows of other millers. In those days, the Guild of Millers still took care of its own, but of course there were no master millers there. Nathan knew, had long known, that a miller never left his mill.

But he was a master miller now — even if the ceremony of his induction that he'd envisaged taking place beneath the golden roof of some great guild chapel had dwindled to a form signed in triplicate — and he gloried in that fact. Heading back from Donna Nook toward Burlish Hill in darkness, he would find his mill waiting for him, ticking, creaking, sighing in its impatience to take hold of the breeze. Often, he sang to it out loud even when no spells were needed. It was only when he was with other people, he sometimes reflected, that he ever felt alone.

The mill was Nathan's now, and that made up for most things, even though there was less and less time for the choir. The spells in those whispering books, and every creak and mood and scent and flavor, every seed of corn and every grain of flour it produced, shaped his life. When he rested at all, it was merely to taste the breeze as he stood on top of Burlish Hill. From there, on the clearest of days, you really could see all of Lincolnshire, and gaze down at the huddled roofs of Stagsby, and the rippling windflash of the lake that lay beside the closed and shuttered windows of Stagsby Hall.

Everyone remarked on Nathan Westover's energy in the seasons that followed. Millers were never known to take an easy bargain, but few drove them as hard as he did. Farmers and grain dealers might have gone elsewhere, but here was a miller who worked to whatever deadline you set him, and never let any of the sacks spoil. On nights of full moon, you could look up and see the sails still turning. It seemed as if he never slept, and then he was to be seen early next morning at the grain markets at Alford and Louth, making deals to buy and sell flour on his own account, driving more and more those notoriously hard bargains, clapping backs and shaking hands in ways that earned money, but also respect.

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These were good times across the rich farmlands of Lincolnshire. The big cities of the Midlands were spreading, sucking in labor under their blanket of smoke, and that labor — along with the growing middle classes who drew their profit from it, and the higher guildsmen who speculated in shares, bonds and leases — needed to be fed. Borne in on endless carts, and then increasingly drawn along rails by machines powered by that same heat and steam that drove those burgeoning industries, came supplies of every kind, not least of which was flour for cakes, biscuits, and bread.

Sometimes, although it seemed less often than in the times of Nathan's childhood, the wind-seller still came to Burlish Hill. In rare hot, windless times, the shimmer of something — at first it could have been nothing more than a mirage twirl of dust — would emerge from the valley, and Nathan wondered as he watched where else this man traveled, and what he did on other, less closed-in days. He always bought a few examples of the wind-seller's produce, although in truth he barely needed them, for he made sure that he made efficient use of all the winds that the sky carried to him, and had little need for such old-fashioned methods of enchantment. The world was changing, just as Fiona Smith had once said it would. Magic was being pumped out from the ground beneath northern cities. You could buy oils and new bearings that were infused with it, which was commonly called aether, and which spilled dark hues in daylight, and shone spectrally in the dark. Nathan was happy enough to use the stuff — at least, if it was for the good of his trade. He knew, or surmised, that the hill itself had once been the source of the power that drove the mill's spells, but perhaps that had been wearing thin, and what else could you do but breathe and work through the seasons that time brought to you, and sing, and wait, and smile, and hope for the best?

Few people ever command anything in this world in the way that Nathan Westover then commanded his mill. He even enjoyed the tasks that most millers hated, and loved filling in the reds and greens of profit and loss on the coldest of nights when the sails hung heavy with ice. Numbers had their own climates, their own magics. Even as the inks froze and his fingers burned with the cold, they whispered to him of how far he had come. He was building up savings in a bank account in Louth — which he was then reusing, reinvesting, but still always accumulating, and it

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sometimes seemed as he stood outside in the bitter air and the night sparkled with motes of frost that the dark shape of the big house twinkled once more with lights.

I'm sure you Westovers have far more money than we Smiths, with that mill of yours.... Even if it hadn't been true then, it was almost certainly true now, and the rumor was that Grandmistress Fiona Smith would soon be back at her home in Stagsby Hall. Nathan waited. After all, London and all those other faraway cites were merely places, just like Stagsby, and he was too accustomed to the capriciousness of the Lincolnshire weather to be anything other than patient. He even bought himself a suit, which he never wore after the tailor's fitting, although he often took it out to admire its cut and shake off its gray coating of dust.

There was an even harder edge to the bargains Nathan drove for the following spring's rye and wheat, an even brisker turn to his mill's sails. Then came another summer, and the larks twirled and sang over the ripening corn, and the skies cleared to a blue so deep and changeless that it scarcely seemed blue at all. Then the weather flattened, and there was no rain, and the heat shrank the lake beside Stagsby Hall, and the corn dried and the dogs panted and even the turning of the mill on Burlish Hill finally slowed until there came an afternoon when everything in the world seemed to have stopped — including Burlish Mill.

Nathan was looking out from the mill's top level when he saw a dark shape emerging from the heat-trembling stillness of the valley below. Certainly not a farmer, for the corn was dying and none of them had anything to bring. Skidding down ropes and ladders, he stood squinting and rubbing the sweat from his eyes as he willed the shape to resolve into a dusty silhouette.

The heat was playing tricks. The body wouldn't stay still, and the movement was too swift. Through the thick, flat air, Nathan caught the brisk rattle of hooves. He waited. A rider on a gleaming, sweating, chestnut horse came up, dismounted, and walked quickly over to him. Female, tall and well-dressed, she took off her riding hat and shook out her red hair.

Smiling at his surprise, Grandmistress Fiona Smith took a step closer, and Nathan saw that, whatever else was different about her, the fiery blue-green gleam in her eyes was unchanged. Then her gaze moved up to the

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sails above him and her smile widened into a wonder that Nathan had only ever seen on the faces of fellow millers. Still smiling, still looking up, she began to walk around the brown summit of Burlish Hill.

Nathan followed. Fiona Smith was wearing dark riding clothes — boots, a jacket, a long skirt — but they were new and sharply cut and trimmed with shining edges of silk. This was nothing like the same girl who'd once stood before the candles of that many-tiered cake. Not that he hadn't dreamed, not that he hadn't dared to wonder — but looking at this woman, watching the way she moved, he marveled at how she'd changed and grown to become something quite unlike the person he'd imagined, yet was still recognizably Fiona Smith.... All those ridiculous thoughts, all those years, and yet here, real beyond any sense of reality, she was.

"This is where you keep the winds?" Despite the heat of the day, the air around the stone lean-to had a different edge.

"You know about the wind-seller?"

"I've made a small study of your trade." Fiona shivered. Her eyes flashed. "Why don't you use one now?" Her gaze changed shade as she looked at him. "But that's the old way, isn't it? — and no self-respecting miller likes to admit that they can't manage on nature's winds alone. And such winds cost money. That's what I admire about you, Nathan Westover. You're passionate, but you're practical as well. You should hear people talk. Everyone...." She turned beneath the still sails, spreading her arms, encompassing every horizon. "From here to here. They all know exactly who you are."

"But probably not by name."

"The miller of Burlish Hill!" She laughed. "But that's what you are, isn't it? Strange, for a man of such substance to have his life founded on a mere breath of air."

Nathan laughed as well, and felt something loosening like a freed cog inside him. He'd never thought of it like that before, but she was right. "I'd always hoped," he said, "that you'd come here."

"And here I am." She gave what he took to be a curtsey. "And I have a proposal to put to you, Nathan. So why don't you show me inside your mill?"

Nathan would have been speechless, but the mill was the one topic about which he was always capable of talking, and pride soon took over

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from his shock at Fiona's presence. He could even push aside the thought of how he must appear, with his arms bare and his dungarees still gritty from the dust of a long morning's cleaning, and probably reeking of sweat and linseed oil as well. At least all his hard work meant that his mill was in near-perfect condition. Even if Fiona Smith had been one of the guild inspectors who'd used to come in his father's time, he doubted if she'd have been able to find a single fault. Pristine, perched, as ever, on the edge of turning movement, the mill welcomed them through streams of sunlight into its hot, fragrant floors.

"You and I," she murmured as she climbed the last ladder and took his arm to help herself over the lip, "I always used to look up at this mill and wonder if I couldn't become a part of what it does." She was so close to him now that he could feel the quickness of her breath, see how the changed brownness of her skin consisted of the merging of constellations of freckles.

Then they both hunched deliciously close together beside the top-most window, looking down and out at all the world as it was revealed from the combined height of Burlish Hill and Mill. Nathan could feel the warm tickle of Fiona's hair. The world was hazed today, but everything was clear in his head as on the sharpest day as he pointed out the directions of the winds. All Lincolnshire lay before them, and he could feel the soft pressures of her body as she leaned closer. Despite these distractions, he found that talking to her was easy as chanting the simplest spell. When most people looked out from Burlish Hill, they strained for the name of this or that town, a glimpse of the sea, or the tower of Lincoln Cathedral. They saw buildings, places, lives, distances to be traveled, but what Nathan saw and felt was the pull of the sky, the ever-changing moods of the air. And Fiona Smith understood. And she even understood — in fact, already knew — about the demands that different types of grain placed upon a mill. How the millstone had to be geared and leveled differently according to the grist and the weather, and all the complex processes of sifting and sieving, and then of proving and damping, about which even the farmers who produced the stuff, and the bakers who baked it, barely cared. She could have been born to be the wife of a master miller.

Then, as they leaned close, she talked to him of her years away from Stagsby. The school she'd been sent to by her father had been just as dreary

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as she'd feared, but she'd traveled afterward, fleeing England and heading south and south, toward warm and dusty lands. Looking out, Nathan could smell the air, feel the spice heat of the lives of those darker-skinned people who, as she put it, slept when they felt like sleeping, and danced when they wanted to dance. He'd never cared much for the idea of travel, for the winds of the world always came to him, but now he understood. The mill was turned fully south, facing across the brown weave of England toward other, more distant, shores. Then, although he hadn't spoken a single word of a spell, the whole great machine shook, and its gears moved, and the sails swooped in a single, vast turn. It was a sign.

Helping Fiona back down the levels, lifting her fully in his arms, he felt her amazing warmth and lightness. She laughed and her breathing quickened and she pressed herself closer still. Leaning the whole soft pressure of her body against him as they swayed together on the main millstone floor, she planted a long, hot kiss on his lips.

The mill was entirely at rest again when they stumbled outside, but Nathan's head was spinning.

"It's almost a shame to be back here in England." Fiona sighed, fanning her neck as she pushed back her hair. "I hate London, with its traffic and fog and smell. But here, here — being *here*. You know, I'd almost forgotten. But I feel so at home here in Lincolnshire. And you and I, Nathan, we really could be partners, equals. Let me show you...."

Reaching into the pocket of her skirt, she took out something small and round. A coin, a bead, or perhaps merely a pebble. But it had a black aether-glow. Crouching down, she tossed it like a dice onto the brittle brown grass, and the blackness spread. Nathan was reminded of the tumble of the wind-seller's sack of storms, but this was different again, and far more powerful. Grids of fire leapt across the blackness. Dimming even the blaze of the sun, they threw sparks in Fiona's hair. When she looked up at him, that same fire was in her eyes.

"This," she said, "is a map, a plan. It goes far farther than you can see from even this hill. Here are the great cities, the ports and towns and industries, of all of England. See, Nathan, see how they blaze! Even you, up here, must use fire. But think what fire really means. Fire means power. The same power you feel when your body grows hot as you move those arms to work all those clever winches, but magnified, multiplied, almost

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beyond measure. Then imagine all that power, that heat, controlled." The brightness amid the dark mirror that lay spread before them increased. It spilled and moved and pulsed along quivering veins. Nathan felt like God himself looking down on this different world, for he saw every movement and detail as close and intricate as the fine auburn down on Fiona's bared neck as she leaned beside him. There were shimmers of steam, furnace mouths, endless sliding arms of metal. He tasted coal and smoke.

"The world is changing, Nathan, and you and I — *we* — must change with it. Forget about the old ways, the old songs, the old spells. Already, see here, the arm of the railway is reaching as far as Spalding. Soon it will be here, and here, and here, as well." Fire dripped from her fingers, spilling and spreading between the embers of the towns. "The engines, the rails, will draw everything closer together. People — their trades, their lives."

Nathan blinked. He saw the tiny machines made larger, and enormously powerful, through clever intricacies of iron. But why was she telling him this? He strained to understand.

"I've already had the land down there around Stagsby Hall surveyed. The road itself can easily be widened, and the lake will provide all the water we could ever need — at least, it will when there's a decent drop of rain. And did you know Nottinghamshire's made of nothing but coal? Transportation shouldn't be an obstacle even before we can get a railhead at Stagsby. Right now, the engineers are drawing up the plans for the enginehouse. But they're just *experts*, Nathan, people who work at desks with pens. I need someone who really understands the local markets, and probably knows more than anyone else in this whole county about the grinding of grain. I need someone who has the whole business in his blood."

"You're saying — "

"I'm saying we could work together, down there. We're living at the start of a new age. Forget about the guilds and all the old restrictions, we can make ourselves its kings and queens. As soon as the money is released, straight after the marriage — before, if I get my way — I'll give the order to start digging the steam mill's foundations."

For all that Nathan Westover was a man of business, the conversation was taking a surprising turn. "But what about here, what about this mill?"

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"I know, I know, it's a wonderful creation. Of course, it will be months before we can get the steam mill fully commissioned. Even after that, I'm not suggesting that we shut this windmill down immediately. Far from it — I'm sure we'll need it for years to take up the slack and deal with the seasonal rush. But this isn't some dream, Nathan. This isn't about sentiment or imagination. My fiancée's a senior master of the Savants' Guild. He has shares in almost all the major rail companies, and they're developing the latest most powerful magics of steam and iron. Of course, he's old, but he still — "

"What do you mean? You're saying you're *engaged*?"

"Where else do you think I'm getting the money to finance this project?"

Nathan stood up. For all the sun's blaze, the darkness of the map seemed to have spread. Then he started to laugh, taking in great, wracking gulps of air. "And you thought — *you* thought that I would give this up? My whole life? Come to work down there...." He raised a trembling hand.

"But what *did* you think, Nathan?" She was standing beside him again now, and far too close. He had to turn away.

"All these years. All these *bloody* years. I've hoped...."

"Hoped what, Nathan?" There was a pause. The light gathered. He sensed a change in her breath. "I wish, I *do* wish, that life could be different. But that isn't how it works, Nathan, and even if it did.... Even if it did, can you imagine how much money the sort of project I'm talking about needs? It's more than you could ever dream of, wealthy though I'm sure you think you are. My husband will get my name and what little of my companionship he still needs when I'm in the city, and I'll get his money and the freedom to live here. It's a fair enough exchange. But as for the rest. As for the rest. It doesn't mean.... I *like* you, Nathan, I truly do, and I felt what we both felt inside the mill. And if we *were* together, if we were business partners, and you were the manager of my mill, who knows...." Her hand was upon his shoulder, kneading the flesh, moving toward his neck, "Who knows —?"

He spun around in a blurring rage. "And you imagined that you could have me as your *employee* — working on some infernal machine! You might as well expect me to go to Hell."

"Hell, is it?" Stumbling back, she stooped to snatch up the stone. Its

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spell swirled around her in a dark vortex of flame in the moment before the map faded. "You think *that* would be Hell?" She grabbed her mare's reins, mounted, and drew the creature about in a wild and angry lunge. It reared, baring its teeth around the bridle. "There's only one infernal machine, Nathan Westover," she shouted, "and we're both on it, and so's everyone else in this world!"

With a dig of her heels, Grandmistress Fiona Smith galloped off down Burlish Hill.

THE HEAT FINALLY relented in peals of thunder. Huge skies hurried over Lincolnshire, and what grain there was that year, poor stuff, flattened and wettened, was finally borne up Burlish Hill's puddled track for grinding. If the miller up there seemed even brisker and grumpier in his dealings than he had before, it got little mention, for all the talk was of what was happening down at the big hall. When storms finally blew themselves out, there came a last day of surprising warmth; the last echo of summer cast across the stark horizons of autumn. Sheer luck, although the villagers agreed that the wedding breakfast to which they'd all been invited could scarcely have been bettered. From the few glimpses they'd had of the bride with her flaming hair and pearl-beaded dress, everyone agreed that she made the finest imaginable sight as well. Pity the same couldn't be said of the groom, who looked dried up and old enough to make you shudder at the very thought of him and her.... Not that much of that was likely, it was agreed, as the wine and the beer flowed, still less a child. Lights were lit as dusk unfurled. A great machine with a greedy furnace and tooting pipes was set chuffing in the middle of the lawns. It gave out steam and smoke and music, and soon everyone began to dance. Amid all these distractions, few would have bothered to look toward Burlish Hill. Still fewer would have noticed that the sails of the mill still turned.

That winter was a hard one. The land whitened and froze, then rang with the iron wheels of the many carts that headed through the gates of Stagsby Hall to scrawl their marks across the ruined lawns. With the thaw came much work as villagers bent their backs to the digging of what seemed like an endlessly complex trench. Sconces and braziers burned as the work continued long into the nights, and the grandmistress herself

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was often present, offering the sort of smiles and encouragements for which the men were greedy, although few yet comprehended exactly what the work was for. Still, they agreed as they sat afterward in the snug and drank their way though the extra money, it might help put Stagsby on the map. It would never have occurred to them that Stagsby had proclaimed itself across all Lincolnshire for centuries by windmill-topped Burlish Hill.

The huge new contrivance itself, part machine and part factory, looked wholly alien as it squatted amid the spring mud at the brown edges of the filthy lake. The opening of it was cause for yet another party at the hall. People were getting blasé about these occasions by now. They commented on the varieties of cake and beer with the air of connoisseurs, and were cheerfully unsurprised when the first turning of the great camwheel failed to occur. Nevertheless, the grandmistress gave a speech up on a podium, and both she and it were more than pretty enough.

Looking down from Burlish Hill through that long winter and into the spring that followed, Nathan absorbed tales and rumors along with the scent of coalsmoke that now drifted on the air. Lights shone now often from the windows of Stagsby Hall, but they were nothing compared to the fume and blaze that glowed beside it. On still days, he heard shouts in odd accents, the toots of whistles, the grumpy huff and turn of a huge and awkward machine, the call of strange spells. The first summer of this new competition, though, went well. Nathan aimed to be as reliable and competitive as ever — in fact, more so. He cut into his savings, reduced his rates, and the crop that year was as good as the previous one had been bad. There was more than enough grist to keep him working night and day, and the winds mostly came when he needed them. Meanwhile, all the machine down in the valley seemed capable of delivering was broken deadlines. If the local farmers took a little of their trade to the new grandmistress, it was more out of curiosity to see the great steambeast at work, and because of her looks, rather than because of the quality of the service she offered. Knowing something of farmers and their nature, Nathan didn't doubt that the novelty would fade. And he was a miller, and there had always been a mill up on Burlish Hill. He was prepared to trust the winds, and the seasons, and be patient.

Nathan was also sanguine about the other changes he noticed in the

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world. He'd understood long before Grandmistress Smith had laid it out before him on that clever map that one of the main reasons for his success as a miller was the improvement in haulage and communication that the spread of the new steam railways had brought. When a line finally reached as far as the Lincolnshire coast, he was happy to use it to visit his mother at Donna Nook; it saved several hours, and meant he no longer sacrificed an entire day's work. On summer's mornings, the cramped, chattering carriages drawn by those odd new machines were filled with families from the big cities heading for a day out at new resorts. He sometimes even stopped off himself for a stroll along the promenade, although to him the Lincolnshire coast remained essentially a wintry place. This, he thought on a freezing, blustery day when the gaudy new buildings were shuttered and sand gritted the streets, is real weather, brisk and cold and sharp.

The tracks now also ran to the town markets, where the steam and the screech of whistles added to the traditional stink and chaos of the cattle pens, the clamoring baskets of geese and chickens, the shouting and the pipesmoke. There were new animals now, as well. Horses that were too broad and strong and stupid to be called horses, and frighteningly fancy ducks and hens. In this new age of new magic, there were also strange new trades. Still, the tall rooms in which the auctions of grain took place remained places of golden, if bustling, calm. The mass of grain itself was stored in barns or warehouses. All that was here were wicker baskets containing samples, which you could thumbnail the husks off to taste the soft white meat inside. Nathan relished the whole day, and the entire process. He would, he sometimes reflected, have come to these auctions even if he didn't trade himself. He even enjoyed the conversations, which were invariably about the air, the earth, and the crops.

Market day that September in Louth was busy as ever, and the roar of voices and the jostle of shoulders was entirely familiar. Standing toward the back, Nathan was tall enough to see over the caps and heads of the factors and farmers, and still had a voice that the older millers who clustered at the front had lost. Then, as the bidding commenced, he noticed a shift in the usual ebb and flow. There was a surprising swirl of attention near to the auctioneer's desk, and it was centered around a solitary head of flaming red hair.

It was the same at the next auction, and the one after that. Against all

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tradition, Grandmistress Fiona Smith — a woman, and no member of any of the recognized agricultural guilds — was bidding on her own behalf. Not only that, but she was far better at getting the auctioneer's attention than anyone else in the room. Worst still, the masculine reserve of these country guildsmen meant that they withdrew from bidding against her at prices that were far too low. Essentially, she was getting her grain on the cheap because of how she looked.

Nathan was shocked to discover that seemingly sensible men could act like such fools. If a batch of corn or oats was selling at a price he knew to be ridiculous, he made sure he made a better bid. Sometimes, he pushed things too high, and the red head that absorbed so much of the hall's attention would give a negative shake. Still, grain was grain, and he had the stuff stored at his own expense until he found the time and the energy to have it delivered and ground. He'd always thought of himself as hardworking, but in that season and the ones that followed, he surprised even himself. The mill turned as it had never turned, and there was always something more that needed to be done, and even a decent wind wasn't always enough for him. On days when there was a moderate easterly, or a keen breeze from the north, Nathan still found himself looking up in frustration at the slow turn of his mill's sails. Finding a wind hanging hooked in his lean-to that made a close enough match to the one that was already blowing was an entirely new skill, although it was one he did his best to learn. Sometimes, on the right days, the whole mill spun and thrummed with a speed and a vigor that he'd never witnessed. It was thrilling, and the needs of the many mechanisms dragged the songs from his throat until he was exhausted and hoarse. On other days, though, the winds fought angrily, and the mill's beams creaked and its bearings strained and its sails gave aching moans. Such strains inevitably increased the wear on the mill's components, and the costs and demands of its maintenance soared.

On cold winter nights, when there was now still grain in need of grinding, or flour that somehow had to be dried off before it could be sold, he dragged himself to the desk with its books of spells and accounts at which his father and many other generations of Westovers had sat. But the nib trembled, his lungs hurt, and the red and green figures could no longer be persuaded to add up. He'd once never have thought of leaving any job

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half-completed, but now he staggered off to snatch the few hours' sleep with the colored inks still warring. Then he dreamed of storms of figures, or that the mill was storm itself, and that the air would never stir again across all of Lincolnshire if he didn't work its sails.

Nathan had got little enough in reply on the rare occasions when he'd mentioned the wind-seller to his fellow millers. Did the man come to them on those same still, hot days on which he always seemed to visit Nathan? That hardly seemed possible. Was there just one wind-seller, or were there several of their species or guild? And where exactly did he come from — and what essential substance was it, after all, from which his winds were made?

A flat, hot day. The mill groaning and creaking, and Nathan's bones filled with an ache for the time — it seemed only moments ago — when there was always too much grain, and never enough hours in the day to grind it. This summer, though, he'd had to rein in his bidding in order to keep up his repayments to the bank, whilst the carts had borne their grain less regularly, and in smaller amounts, up Burlish Hill. The farmers never looked Nathan directly in the eye or told him what they were doing, but the evidence was down there in the valley, in a pounding haze of noise and heat. Could people really work in such conditions, when the day itself was already like a furnace? Nathan wiped his face. He hawked and coughed and spat, and worked the bloody phlegm into the dry ground of Burlish Hill with the heel of his boot. Just last week in Gainsborough, he'd been having a bite of lunch at one of the inns beside the market before taking the train that now reached Burwell, only five miles out of Stagsby itself. His bread roll had tasted gritty and sulfurous. He'd spat it out.

A distant engine chuffed across the landscape, trailing its scarf of steam. Somewhere, a whistle blew. Nathan coughed. No grist in need of grinding, but he still had half a mind to unlock the lean-to and take out whatever winds he had left in there, just for the ease they brought to his breathing, and the cool feel of them twisting in his arms....

A gray shimmer was emerging from the valley, and it was too stooped and solitary a figure for his heart to begin to race. Nathan remembered his fear and excitement back in the times when his father had been master of this mill, and every spell had been new, every wind fresh and young. Still,

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it was good to think that some things didn't change, and he almost smiled at the wind-seller; almost wished him a cheery good day.

The man flapped his old cloak. He seemed to give a shiver as he studied the hot, dry horizons. "The hardest of all seasons, eh?"

Nathan shrugged. Almost every farmer said something similar to him when they came up here. It was usually a prelude to their explaining how they couldn't afford his normal rate, and it was scarcely in his interest to agree with them. But Nathan found himself nodding. This really *was* the hardest of all seasons.

"I've a hundred remedies...." The wind-seller unshouldered his sack, and there they all were beneath: a knotted multitude of rags, but such beautiful things, especially on a day such as this. Storms and airs and breezes hazed about them in a thousand hurrying tints of blue and black and gray. Nathan knew how to drive a bargain, and the Elder knew he wasn't in position for extravagances, but he couldn't help feeling stirred, drawn, excited. And was it his own wheezing breath or the mill itself that gave off that needy groan?

Nathan barely heard the wind-seller's patter about his products. He of all people didn't need to be told about the poetry of the skies. He lifted a tarred and bunched handful of northerly rope that wasn't from the north at all, and felt the bitter bliss of it swirling around him, then the soft twine of a southwesterly blown in from far beyond every southwesterly horizon. Its breath in his face was the laughing warmth of a kiss. He bore them all, great stirring armfuls of them, into his stone lean-to, and hooked them up on their iron hangers, where they stirred and lifted with a need to be let loose. It was sweet work, delicious work, to hold and be taken hold of by this knotted blizzard of winds, and Nathan found that he no longer cared how many he really needed, nor what he could afford. By the time he'd finished, there was nothing left beyond the sack itself, and, had the wind-seller offered it to him, he'd have taken that as well.

Nathan was sweating, gasping. He was possessed by hot spasms, shivers of cold. How much had he actually paid for this glut? He couldn't recall. Neither did he particularly care. But as the wind-seller whistled through thin lips and laid the empty thing of rag across his back, Nathan felt that today he was owed something more.

"Tell me, wind-seller," he asked, although he knew that such questions

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should never be asked outside those who belonged to a certain trade or guild, "exactly how is it that your winds are made?"

"It was your father I used to deal with, wasn't it?" The man's cold gaze barely shifted, but it took in all of Nathan, his mill, and his hill. "Although you and he might as well be the same. Same mill, same man, same sacrifices, eh? But it's always slightly behind you, isn't it? — I mean the best of all days, the keenest of winds, the sweetest of grain. It's never quite where you're standing now. And the longer you work, the more you give up, the more time hurries by, the more it seems that the strongest breeze, the whitest clouds, always came yesterday, or the day before."

"You're saying your winds are taken from the past?"

Twisting his neck, the wind-seller gave a shake of his head. "Time was, there were no sails up here, no millstone — and no miller, either. But the winds still came, and the sun rose and fell. Back then, people saw things clearer. You, miller, you've merely given up sweat, and years, and the good state of your lungs to keep this mill turning, but for those people it was the seasons and then the sun itself that had to be turned." The wind-seller laughed. It was a harsh sound. "Imagine — the blood that was let, the sacrifices they made, to ensure that spring arrived, that the next dawn came! But the past is gone, miller — used up. It's as dry and dead as this ground, which has been seeped of all its magic. What we're left with are the husks of our memories. Just like this sky, and this land...."

Nathan watched the wind-seller's shape sink down into the valley's haze. Might as well, he reflected, have tried talking to the winds themselves.

CONVERSATION after the markets in Lincolnshire bars always came free and loud. Nathan had never been one to seek out companionship, but now he found that there was some consolation to be had in sharing a glass or two, and then a few complaints, after another pointless morning at the auctions. Grandmistress Smith was less of a novelty these days, and she won her bids less easily, for there were other steam mills at Woodhall and Cranwell, and an even newer, bigger one in construction at South Ormsby. The world was changing within the giddy scope of one generation, and it wasn't just the wind and water millers who were losing out.

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Elbowed in with them amid the hot jostle of sticky tables in those bars were hand weavers, carters — even smithies: for all that the Smithies Guild was hand-in-glove with the financiers who constructed these new machines, it was the high-ups, the pen pushers, the ones who wore out their fat buttocks by sitting at desks, who made a nice living, and devil take the old ways and local village businesses founded on decent, traditional skills. It was an odd coalition, both alarming and reassuring, and the talk turned yet more furious as the evenings darkened and business suffered and the drink flowed.

Plans were hatched, then laughingly dismissed as more beer was bought. But the same complaints returned, and with them came the same sense of angry helplessness. Nathan was never a ringleader, but he and everyone else around those tables soon agreed that there were better ways to spend your time and energy than sitting uselessly in a bar. They were *guildsmen*, weren't they? They had their pride. Better to go down fighting. Better still to resist wholeheartedly, and not go down at all.

They met one night at Benniworth. In the morning, the precious furnace that had just been delivered was found transformed into a dented mass of metal as if by a hailstorm of hammerblows. They met again at Little Cawthorpe. A culvert beneath the embankment of the new railway that would bear coal from Nottingham far quicker than the old canals was blown apart, although the damage was far less than might have been expected, considering the amount of explosive that was used. Lincolnshire earth, as any farmer would have attested, was notoriously slow and sticky stuff to move. Something stronger and better was needed, and Nathan brought it with him the next time they met outside Torrington in an owl-hooting wood.

"What you got there, miller?"

Lamplit faces gathered around him, edging and prodding to get a glimpse of the oddly lumpen knot he held in his hand.

"Something alive, is it?"

"Something that'll make them think twice about stealing the living off decent guildsfolk?"

Nathan couldn't bring himself to explain. He merely nodded, and felt the glorious lightness of a wind that had come from a point in the east to be found in no compass. These men didn't really expect to understand.

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Theirs was a loose alliance, and they remained almost as wary of each others' skills and secrets as of those they were campaigning against.

They called themselves The Men of the Future by now, because that was the opposite of what their wives and neighbors shouted after them, and their target was another mound of earth, although this was far bigger than the railway embankment. Steam mills and their associated machinery were even greedier for water than the watermills they replaced, and a reservoir to supply one such new machine had recently been constructed here in Torrington, taking up good grazing land and creating more aggrieved men. As, shushing each other and stumbling, they came upon it through the moonless dark, the clay bank looked huge. They laid the several caskets at its base. Then they turned toward Nathan.

"Whatever that thing is, might as well use it now, miller."

Nathan nodded, although his movements were slow. The wind that twisted in his hand gave off a sharp scent of spring grass. Leaving it in this marshy spot was like destroying a treasured memory. But what else could he do?

They scrambled back through darkness from the hiss and the flare of the fuse. A long wait. The thing seemed to go out. A dull crump, a heavy pause, then came flame and earth in a sour gale, and a white spume of water lit up the dark.

The men cheered, but the rumbling continued, shaking the ground beneath their feet. Some were knocked over, and all were splattered by a rain of hot earth and stone. There was more fire, and then a boiling, roaring wave. They ran, scattered by the power of all the enraged elements that they had unleashed. It was lucky, it was agreed when heads were finally counted as they stood on a nearby rise, that no one had been buried, burned, drowned, or blown away. It looked as if the dam was entirely wrecked. Several fields had certainly been turned into mire. People would have to listen to Men of the Future now.

It was a long walk home. Drenched, muddied, Nathan kept to the edges of the roads although he scarcely expected to encounter any traffic on a night this black, but then he heard a rumble behind him. He turned and saw what seemed to be a basket of fire approaching. Then he saw that it was some kind of wagon, and that it was powered by steam. For all his increasing familiarity with such engines, he'd never heard of one that ran

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along an ordinary road, and curiosity made him reluctant to hide entirely from sight.

It rumbled past. Big wheels. A big engine. It really did shake the earth. Then it stopped just a few yards past him, spitting and huffing, and a door at its back flung open.

"I'm guessing you're heading the same way that I am, Nathan Westover," a voice called. "Why don't you give your feet a rest?"

Dazed, Nathan stepped out from the edge of the ditch. He climbed in.

"You look as if you've...." Grandmistress Smith's eyes traveled over him.

"It's been a hard season."

"That it has. I'm just back from London, from burying my husband. We'd grown fond of each other, contrary to how people talk, and he was a decent enough man. Neither do I make a habit of picking up men from the roadside on my travels, although I hear that's how the tale is told."

Nathan had heard no such tales, and his chest was proving difficult in the sudden change of air within this hot compartment which was padded with buttoned velvet, and lit from some strange source. The woman who sat opposite was dressed entirely in a shade of black far deeper than that he remembered she had once worn on her sole visit to his mill. No silks or trimmings. Her hair had dimmed as well; trails of gray smoked through it. Only the flame in her eyes was unchanged.

"I suppose," she murmured, "you think we're deadly foes?"

"Isn't that what we are?"

She waved a hand. "Merely competitors, like your fellow millers. And it was never as if — "

"Fellow millers!" Nathan wheezed. He cleared his throat. "There are few enough of us."

"But when you say *us*, Nathan, why must you exclude me? We make the same product. I bid for the same grain in the same halls. And you and I.... There's a new science. It's called phrenology, and it allows you to determine a man's — I mean a person's — nature merely from studying the bumps on their head. I've had it done myself, and mine reveal me to be stubborn and obstinate, often far beyond my own good interests." She attempted a smile. "And you...." She reached across the carriage. Her fingers brushed his bald scalp. "You're an easy subject now, Nathan. One

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hardly needs to be an expert to understand that you're much the same. And I suppose you remember that offer I made...." The steam carriage, which was a clumsy, noisy thing, jolted and jostled. "Of sharing our skills. It could still be done. Of course, I have to employ men from the new guilds to see to the many magics and technicalities of running a steam mill. In all their talk of pressures, recondensing, and strange spells — I can barely understand what they mean even when they're not talking the language of their guilds. Once, I could snap my fingers...." She did so now. There was no flame. "And that mill of yours. The dusty air — anyone can see what it's doing to you. We could still...."

She trailed off. The machine rumbled on through the night, splashing through puddles, trailing spark and flame.

"There's no point, you know," she said eventually as they neared Stagsby. "You can't resist things that have already happened. Those men, the ones who give themselves that stupid name and are causing such damage. They imagine they're playing some game, but it isn't a game. The Enforcers will — "

"That's not what counts — someone has to put up a fight against steam!"

The lines deepened around her eyes. "You're not fighting steam, Nathan. What you're fighting is time itself."

More than the grain and the flour, more even than the mill, the winds were Nathan's now. Work or no work, whatever the state of the air and the clouds, they encompassed him and the mill. He talked to them in their lean-to, unhooked them, stroked their bruised and swirling atmospheres, drew them out. As the rest of the world beyond his hilltop went on with whatever business it was now engaged in, Nathan's mill turned, and he turned with it. He laughed and he danced. Strident winds from a dark north bit his flesh and froze his heart. Lacy mares' tails of spring kicked and frisked. His winds swirled around him in booming hisses as he sang out the spell that made them unbind, and they took hold of his and the mill's arms. In that moment of joyous release, it seemed to him that he was part of the air as well, and that the horizons had changed. There were glimpses of different Lincolnshires through their prism swirl. He saw the counterglow of brighter sunsets, the sheen of different moons. It reminded

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him of some time — impossible, he knew, too ridiculous to recall — when, godlike, he'd looked down on the brightly flowing tapestry of the entire universe, which spun like some great machine. He saw the ebb and flow of cities. He saw the coming of flame, and of ice, and the rise of vast mountains pushing aside the oceans. He saw glass towers and the shining movements of swift machines along shimmering highways of light. He believed he glimpsed heaven itself in the sunflash of silver wings amid the clouds. The visions faded as the mill took up the strain of the wind, but they never left him entirely. They and the winds returned to him as he lay on his bunk and snatched at flying fragments of impossible sleep. They came to him more quietly then, not with a scream and a screech and a growl, but in a murmur of forests, a sigh of deserts, a sparkle of waves, a soft frou of skirts. They breathed over him, and he breathed with them, and he let them lift him in their fragrant arms. In and out of his dreams, Nathan laughed and danced.

For all the many winds that he'd bought from wind-seller on his last visit, Nathan knew he'd been less than frugal in their use. Sometimes, on the days of hard sky and mirage earth, he'd look out for that characteristic silhouette climbing up the little-used path from the valley, but the man never came, and part of Nathan already knew that he never would — not because of the indiscreet questions he'd asked, nor for the money he now couldn't afford to give him, but because the man's trade was like that of the millers themselves, and was thus in decline. Why, Nathan had even heard it said that sailors, who were surely the other main market for the produce of the wind-seller's guild, were now installing clever and brassy devices on the decks of their ships that could summon a wind to fill the sails when there was no wind at all. Partly, that sounded like the blurry talk of smoky barrooms, but that, as far as Nathan could see, was how so much of the world had become. He still looked out for the wind-seller on those sour days of bad air that seemed to come all too frequently now, but he knew in his heart that a figure would never shape itself out of the smoke and haze of the valley below. Those last purchases, this marvelous glut, had been like the rush of flour in the chutes when the hoppers were nearly empty. Soon, all that would be left was dust.

Nathan horded his last winds as a starving man hordes his withering supplies. He toyed with them in his mind, carried them about with him,

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inspected them, sniffed them, sang to them, got the tang of their currents in his mouth. Still, the moment of their release had to come, and it was all over too quickly. And just how were they made — where were they from? The question might now seem immaterial, but it wouldn't let Nathan go. He studied the knots ever more carefully, not only for their feel and bluster, but also the exact nature of their bond. Of course, he'd always known how to undo them — that came to him as easily as winching a sack of grain — but their tying was something else. His fingers traced the long, wavering pattern, which he realized was always the same, no matter from what substance the knot was formed. He followed the kinks that were left in the exhausted scraps once the wind had gone. With so few left, and the wind-seller so absent, it even seemed worth trying to see if he couldn't capture a few small winds himself.

Small they were. He was sure that something vital was lacking even if, as the wind-seller himself had once seemed to say to him, that *something* had already been bled from the very ground. Still, and guilty though he felt, Nathan would sometimes desert his mill for a few hours to gather grasses, or wander the hedgerows of the landscapes below in search of strands of sheep's wool, deer pelt, castings of snake's skin: anything, in fact, that could reasonably be knotted, and through which the winds might once have blown. The knots strained his fingers. They hurt at his heart. They blurred before his eyes. Yet, whatever it was that might once have been trapped within them wasn't entirely lost, for when he undid them, they would let out a sigh, the breath of lost season's air. Never sufficient to drive anything as big as his mill, but enough to bring an ease to his breathing on the most difficult nights when his lungs seemed to close up inside him, and to add some flare and spectacle to the conflagrations wrought by the Men of the Future.

Although the wind-seller never came, Burlish Mill had other visitors now. Men with canes and women with extravagant hats, borne almost all the way to Stagsby from the midland cities, first class, would climb Burlish Hill on summer afternoons and smilingly ask what exactly the cost was for a guided tour. He was slightly less brusque with the painter who lumbered all the way up the slope with his boxes, canvases and easel, but all his talk of *setting down for posterity* was off-putting, and Nathan sent him back down as well. Dismissed, too, was the man who lumbered

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up with a wooden box set with a staring glass eye, within which, bizarrely, he claimed he could trap and frame light itself.

His trips to Donna Nook had grown less regular, and the last occasion he chose to see his mother was the sort of bitter, windy winter's day when he'd have spilled the hoppers with the sacks of grist he knew his mill longed for, had he any left. After the confinement of the train, he'd hoped that the air along the coast would make his breathing easier, but he felt as if he was fighting some new, alien substance as he hunched toward the old hop warehouse, which now had sand sliding in through its lower windows. His mother wasn't up in her little room, and the fire was out. Stumbling, wandering, he finally found her hunched and gazing seaward from the crest of a dune. Her body was dusted, as if by a coating of the finest and lightest of flours, with a layer of frost.

Now, the nights when he did the work of the Men of the Future were his only escape from the needs of the mill. More and more, he came to think of the world beyond Burlish Hill as a dark and moonless place, erupting with hot iron and black mountains of clinker and coal. The Men of the Future had grown better organized, and the targets of their visitations were kept secret from all but a select inner group to which Nathan had no desire to belong. He was happy, although he knew that happy wasn't really the word, simply to meet in some scrap of wood or of heath, and to take the long, silent march toward another citadel of smoke and fire. There were so many of them now, and with so many purposes. Not just weaving and milling, but threshing, road-making and metal-beating: so many new technologies and spells. Sawmills were powered by steam — printing presses, even — and with each threatened trade came a swelling of their ranks. Pale, slim-faced men from far towns, workers with skills that Nathan couldn't even guess at, were taking charge, and they knew far better than their country colleagues how best to destroy a steam-driven machine. It wasn't about sledgehammers or pickaxes, or even explosives. Such brutal treatments were time-consuming, inefficient, and loud. Far better, they murmured in their slurring accents, to use the powers and magics of the devices themselves. Nathan could appreciate the cunning of setting a millstone turning so its two faces tore and clashed themselves apart. Could see, as well, how clever it was to put lime in a cold furnace, or molasses in a water vat, although some of the more arcane skills that

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these men then started to use, the muttering of short phrases, the leaving of scrolls of symbols that caused machines and furnaces to break apart when they were restarted, seemed too close to mimicking the work of the new steam guilds themselves. But something had to be done, and they were doing it, and these new Men of the Future continued to encourage the use of the small winds Nathan brought himself. Not that they were essential, he understood, to the work in hand, but their ghostly torrents, which lit up these damnable mills and factories with strange, fresh atmospheres, had become something of a signature of their work across Lincolnshire.

The nights when they met were never ordinary. There was always a similar mix of fear and hopeful excitement. They were, Nathan sometimes reflected, like midnight versions of the summer trips that families from the cities took on the railways to the lakes, the hills, the coast. Some Men of the Future even caught the day's last train to get to their next meeting place, then the morning's milk run to head back home again, and here they all were tonight, gathered once again in some typically remote spot, although the distance of travel had been much shorter than usual for Nathan. He even knew the farmer on whose land they were now standing; he'd once been a good source of trade.

Faces down, backs hunched, the Men of the Future shuffled toward their target in wary silence. As ever, the night was moonlessly dark, but to Nathan these were familiar roads. He didn't count himself a fool, and had long anticipated the night when they would head toward Stagsby. A year or two before, he'd have probably left them to get on with their work and returned to his mill, or perhaps even tried to persuade them to wreck a different machine. Not now. When he was heading home through a gray dawn after one conflagration, a passing grain merchant had halted the hairless beasts drawing his wagon to ask the way to Stagsby's Mill. Nathan knew from the scent of the sacks alone that here were several days' work of good barley, and offered the man an uncharacteristically cheery good morning. The merchant stopped him short when he began his directions. He was looking, of course, for the steam mill down in the valley; not that other thing — just a relic, wasn't it? — up on the hill.

Burlish Hill was nothing more than a presence in the darkness as the Men of the Future passed through the village, where no murmurs were

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made, no lights were shown. Then came a faint gleam of iron as they met the closed gates of Stagsby Mill. But, just as Nathan had witnessed before, one of the thin-faced men at the head of their procession murmured cooingly to the bolt, and the metal wilted and the gates swung open.

There was no lawn, no trees, only bricks and mud, now at Stagsby Hall. But Nathan, as he turned and blundered into the men around him, couldn't help remembering, couldn't help trying to look. This was the most dangerous time of their work. One night, there would surely be mantraps, men with guns, regiments of Enforcers, or those poisonously fanged beasts like giant dogs, which were called balehounds. Indeed, many of the Men of the Future, especially those of the old kind, would have relished a fight, and there was a brief flurry when the eyes of some living beast were sighted in the pall of dark. Then came suppressed laughter, the glint of smiles. Nothing more than a donkey, old and mangy, tethered to an iron hoop. Once again, their secrecy seemed to have held.

The Men of the Future reached the doors of the machine itself, which gave as easily as had every other barrier. Inside, there was a warmth and a gleam to the dark. The furnace was still murmuring, kept banked up with enough coal to see it through to next morning without the need to relight. There was living heat, too, in the pipes that Nathan's hands touched. He'd been in enough of such buildings by now for some aspects to seem less strange, but this one, especially when the doors of the furnace were thrown open and light gusted out, stirred deeper thoughts. After all, grain was ground here. Although this place was alien to him, aspects of it — the strew of sacks, the smell of half-fermented husks, the barrels of water with their long-handled scoops for damping down — were entirely familiar. But there was something else as well. Nathan sniffed and touched. He was so absorbed in whatever he was thinking that he crashed his head on a beam and let out a surprised shout. Faces glared. Voices shushed him. Rubbing his bare forehead, he realized what it was. This place was cramped, awkward, and messy compared to some of the machines they'd recently targeted. After all, Stagsby Mill had been working down in this valley for almost twenty years, and was getting old.

He watched as the thin men set to their work, quietly shoveling coal into the furnace, stoking up its heat, whilst others of their ilk smirkingly tended to the taps and levers that controlled pressure and heat,

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murmuring their own secret spells. The heat grew more solid. New energies began to infuse the bricks and irons of the engine house. The main rocker let out a protracted groan. A hiss, a gesture of quick hands, and Nathan was summoned toward the glare of the furnace. The wind that he held in his hands was one of his own best gatherings — just a few looped wisps of seed-headed grass, but it felt soft and sharp as summer sunlight — and he felt sad to release it, much though he knew that it had to be done. Teeth of flame gnashed as he tossed it into the glowing mouth. The furnace gave a deep roar. Coughing and gasping, he was shoved back.

The Men of the Future were in a rush now, but eager and excited as they bustled out. Back in the safety of the cool darkness, they turned and looked, shading their eyes from the open enginehouse door's gathering blaze. There were jeers and moans of disappointment when a shadow blocked the space ahead; some idiot was standing too close and spoiling the show.

"Martin, Arthur, Josh!"

A woman's voice, of all things, although none of them recognized the names she called. When she called them again, and added a few others, along with some hells and goddammits for good measure, it became apparent that she hadn't expected to find herself alone. There was derisory laughter. So much for the hired thugs and the balehounds, although, as Grandmistress Fiona Smith stepped across the puddled mud toward the gaggle of men who hung back in the deeper darkness, it became apparent that she was holding a gun.

"You're trespassing! I warn you — I'll *use* this thing...." The gun was hefted, although it was plainly an old device. "This isn't just filled with swan shot."

The laughter grew louder. This was all simply adding to the show. The grandmistress glanced back when sudden light speared from every aperture of the building behind her.

"What exactly have you done to my — "

Then the entire engine house exploded.

Nathan ran, fighting his way through the searing air, the falling bricks and earth. The blaze was incredible — it was like battling against the sun. A figure lay ahead of him, although it shifted and shimmered in a wild dance of flame and smoke. He grabbed it, drew it up, hauling it and himself

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across the burning earth that seemed to be turning endlessly against him until, finally, he sensed some diminution of the incredible heat. Coughing, gasping, he laid Fiona Smith down on the rubble and mud beside what had once been the lake of Stagsby Hall. The water was scummed now, licked into rainbow colors by the leaping flames at his back, but he fumblingly attempted to scoop some of it over her blackened and embered flesh before he saw that it was already too late. Little flamelets and puffs of smoke played over Fiona Smith's charred body, but the fire was leaving her eyes. He leaned close, hands moving amid the glowing remains of her hair, and in that last flicker of her gaze, there came what might have been a twinge of recognition, then a final gasping shudder of what felt like release, relief. Nathan's hands still twined. Looking down, he saw that his hands had unconsciously drawn a knot in the last unsinged twine of Fiona Smith's glorious red hair.

THE CLIMB UPHILL had never been harder. His own flesh was burned. His lungs were clogged and charred with flame and soot. As he finally reached, half-crawled, across the summit, he realized that this was the first time he'd ever ascended Burlish Hill without sensing the moods of its air. Now that he did, hauling himself up and looking around at a world which, but for the fire that still blazed in the valley, lay dark at every point of the compass, he realized that there wasn't a single breath of wind — not, at least, apart from whatever was contained within that last knot of hair he'd cut loose with a glowing claw of metal, and that his fingers now held crabbed in his pocket, and was far too precious to be released.

Nathan coughed. With what little breath he had, he tried to call out to his mill. The sound was nothing: the mere whisper of dead leaves from some long-lost autumn. Impossible that this vast machine should respond to anything so puny, but, somehow, groaningly, massively, yet joyful as ever, it did. The sails began to turn. In a way, Nathan had always believed that the winds came as much from the mill itself as they did from the sky-arched landscape, but he'd never witnessed it happen so clearly as it did on that night. Invisibly, far beyond the moon and the stars, clouds uncoiled, horizons opened, and — easy as breathing, easy as dancing, sleeping, and far easier than falling in love — the keen easterly wind that

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most often prevailed across Burlish Hill, but that was never the same moment by moment, began to blow.

There wasn't a trace of grain in need of grinding, but Nathan still attended to his mill. He released its shackles of winch and brake and pulley to set it turning wildly until all the mechanisms that he'd known and sung to for his entire life became a hot, spinning blur. The sound that the mill made was incredible — as if it were singing every spell in every voice that had ever sung it. He heard his father there within that deep, many-throated rumble, calling to his mill in the strong, clear tones that he had once possessed, and humming as he labored, and sometimes laughing for the sheer joy of his work. And the softer tones of his mother, and all the other mistress millers, were there as well. *See, Nathan, how it sits, and how that band of metal helps keep it in place.... Now, it's getting near the end of its life....* Nathan Westover heard the sound of that stuttering pulley, and then of his own unbroken voice, which had caused its turning to mend. All the winds of this and every other earth sighed with him, and the mill's sails swooped, and the world revolved, and the sky unraveled, and the stars and the planets spun round in dizzy blurs, and the seasons came and went. He saw Fiona Smith, young as she was then, puffing out her cheeks before that huge cake at Stagsby Hall, when the place had still possessed lawns, and its oaks were unfelled. Saw her again at this very mill. *I have a proposal to put to you, Nathan....* Saw her as she was at the grain auctions, with the light from the tall windows flaming on her red hair, then sitting in that bizarre machine that rumbled across the countryside, when that same hair was twined with smoke trails of gray. Saw all of these things, but felt, above all, the warm, soft pressures of her body in those few glorious moments when he had once held her on this very millstone floor, and the hot, amazing reality of the taste of her lips and mouth against his own.

The mill roared and Nathan roared with it. Axles smoked, joints screamed, cogs flew, and then, as something final sagged and broke, the top face of the millstone itself bore hugely down on its lower half, screaming a brilliant cascade of sparks.

That memorable night, the villagers of Stagsby were already swirling like ants around what was left of the steam mill when they looked up and

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saw that the windmill up on Burlish Hill was also burning. Amid the chaos, a ragged line was established to pass hand by hand, slow bucket by bucket, what little was left of the waters of the lake. But the distance was too far, and the mill was already massively ablaze, its flaming sails turning against the night in what seemed to be no wind at all. The heat soon grew far too ferocious to approach, although many stood back to watch, such was the terrible, beautiful sight it made — like some great, mythic bird.

Afterward, there were many rumors. Most popular in Stagsby itself was that the steam mill had long been in decline, and that the grandmistress had been purposefully engineering its destruction to claim on the insurance when she'd been caught out by the suddenness of the blast. Also popular, especially amongst those who had little idea of what insurance was, was that she'd been doing some extra overtime with one of her workers, if you get the meaning, when things had got, well, just a little *too* hot. And as for the old windmill — most likely it had been caught by a spark flown up by the blaze, and everyone knew that the place was half ruined anyway, and doubtless tinder-dry. All assumed, for want of any other sightings, that the miller himself had died inside his mill. The perfunctory official investigations gave people little reason to vary their views. The other theory, which was that the wealthy owners of the latest self-condensing machines had used the so-called Men of the Future as a means of destroying competition, received little credence, and then only amongst those who were in their cups.

Soon, as the wind lifted the ash and bore it westward, and the rain dissolved the charred wood and the grass regrew, nothing but a circle of stone was left on Burlish Hill. Nor was the steam mill down in the valley ever reconstructed. Farmers now sold their harvests on wholesale contract to the big new factories, thus giving up their financial independence for what seemed, for a while, to be a good enough price. Stagsby Hall was acquired by one of the leading families of the steam guilds as a country retreat. Soon, its lawns were reestablished and the lake was dredged and gleamingly refilled; the interiors were extravagantly refurbished in the latest style. The ruins of the steam mill were shored up and prettified with vines and shaggy moss. Five years on, and they could have been a bit of old castle; a relic from an entirely different age. But much of this was hearsay. To judge by all the chuffing, huffing modern carriages that came and went

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that way through the village, parties were frequently held at Stagsby Hall, but they weren't of the sort to which anyone local would ever be invited. You really had to climb up to the top of Burlish Hill to get any real sense of how fine the big house now looked. From up there you could still watch the clouds chase their reflections across the lake, and see the sunflash of its windows, and breathe the shimmer of its trees, but few ever did, apart from stray couples seeking solitude — for what, otherwise, would be the point?

WEEVILS, WOODWORM, fire, and rats are the four apocalyptic demons in a miller's life, and, of these, fire is the worst. But, Nathan reflected as, burned and breathless, he looked back up at the river of flame that steamed westward from Burlish Hill, there were worse things still. At least, he told himself as he walked on, he hadn't left his mill, for there was nothing left to leave.

Following no particular direction, he kept walking until morning, and came across a railway station that he dimly recognized from his journeys as a Man of the Future. He sat and waited there, and took the first train, which bore him all the way to the coast. It was a bright day. Even this early in the summer season, families were camped out on the beach behind colored windbreaks. Laughing children were bathing in the ocean's freezing shallows, or holding the tethers of snapping kites. Nathan watched and felt the bite of the salt against his face, happy to see that the world still turned and the winds still blew, whether or not there was a mill on Burlish Hill.

The rails went everywhere now. They took you places it was hard to imagine had ever existed before the parallels of iron had found them. Even when the timetables ran out and he discovered himself sitting on a empty platform at a time when he knew that no train would be coming, their shining river still seemed ready to bear him on. He traveled. He journeyed. He leaned out of carriage windows, and looked ahead into the fiery, smoking sunset, and licked the salt smuts from his lips. Had he the breath left within him, he might have sung to the teeming air.

Another summer was coming, and the fields were ripening across the wide and heavy land. He sat on the steps beside the bridge of a riverside town where a mother and her daughter were feeding the crusts of their sandwiches to the geese and swans. They were both red-haired. Nathan's

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fingers bunched the knotted lock he still kept in his pocket. He often longed to release it, and to feel the special giving of a final wind-spell. But he remembered the look in the last embers of Fiona's eyes, and he wondered what he truly had trapped there; what, if released, he might be letting go.

North and south, he traveled on through the many nights, and the landscapes that lay around him in the darkness were stitched in flame. Dawn brought rooftops, chimneys, on every horizon. Swallowed in giant buildings, spat out with the litter and the pigeons onto surging streets, he gawped and wandered. He was cursed, bumped into. Leering offers were made in return for money he no longer had. The sky was solidly gray here, and the airs that rushed up to greet him from the chasms of streets were disgustingly scented. This was a place without seasons, or with seasons that were entirely its own. Nathan had grown accustomed to the tides or delays of departures at stations, but here he was lost.

He wandered the darkening city, taking odd turns as he sought some direction that was neither north nor south, east nor west. Far behind him, the girders of some vast structure were being erected, their black lines gridding the sky, but there were fewer people here, and those who were became furtive in their glances, or ran away at the sight of him with screams and clatters of clogs. Not a place to be, he thought, for anyone who doesn't have business here. But, more and more, he felt that he did. He almost ran, and the bricks rushed by him, whispering with the echo of his dried-out lungs. Whispered, as well, with the glow of all the spells and talismans that were scrawled across them. Some, he was almost sure, belonged to his own guild. Others, he thought, had the taint of the sea about them. And here were the symbols of men who tended the tallest roofs, and of other guilds of those who worked in high places, and breathed the changing airs as they looked down on a different world.

Wheezing, exhausted, light-headed, he stumbled on. There were gates and walkways. The hidden thrumming of vast machineries ground up through the earth. Dawn, though, brought a different kind of landscape. He was tired beyond exhaustion, and it amazed him that his feet dragged on, that his heart still stuttered, that his lungs raked in some sustenance, but the city had cast itself far behind him — so far that the shifting horizons had smeared it entirely out of memory and existence. Here, puddled and rutted lanes unwound and divided to the lean of empty

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signposts, bounded by endless hedgerows: fences, gates, railings, snags of string and wire and thorn. And the wind blew everywhere, and from all directions — and the world fluttered with the litter of what seemed like the aftermath of some archetypal storm. Hats and scarves, stray shoes, newspapers, the pages of books, umbrellas, whole lines of washing, the weathered flags of guilds, even the torn sails of ships, fluttered everywhere, or were snatched to tumble in the sky like wild kites.

Nathan's fingers bunched once more around the knot of Fiona's Smith's hair. Here, if anywhere, was the secret of how she might be released. He understood now what all his wanderings had been about, which was to get here, wherever *here* was, and find the spell, the secret, that might unlock that last knot. But he was tired. He was tired beyond believing. Walking, he decided as he leaned against another blank signpost, was an activity he might still just about be able to manage, but he wasn't so sure about breathing, nor sustaining the increasingly weary thud of his heart. But still he pushed on, and the winds, as they came from every and no direction, pushed with him, tearing at his clothing, afflicting him with hot and cold tremors, spiraling around him in moans and whoops. Then he heard another sound — it was a kind of screaming. Although he now had no idea what it was, it drew him on.

Another fence, its slats torn, flapping and rotting, and another gate, which turned itself closed and then open in the wind, although that wasn't where the screaming came from. Nathan had to smile. It was simply an old weathercock, fixed to a fencepost, and turning madly, happily, this way and that in the wind. So familiar, although he'd never stood this close. The one odd thing about it, he realized, as it screamed and turned on its ancient bearings, was that the four angles of the compass that usually projected beneath such devices were entirely absent, even as rusty stubs. Then the gate reopened, and the weathercock screamed and shifted in directions that lay beyond any compass, and the wind also turned, pushing him along the path that lay beyond.

There was a house, although its windows flapped and its slates and chimneys were in disorder, and there was also a garden of sorts. That blurry sense that he'd felt all morning was even stronger here. There were trees that in one moment seemed to be in blossom, but the next were green, then brown, then gold, then torn to the black bones of their branches in sudden flurries of storm. Roses untwined their red lips and

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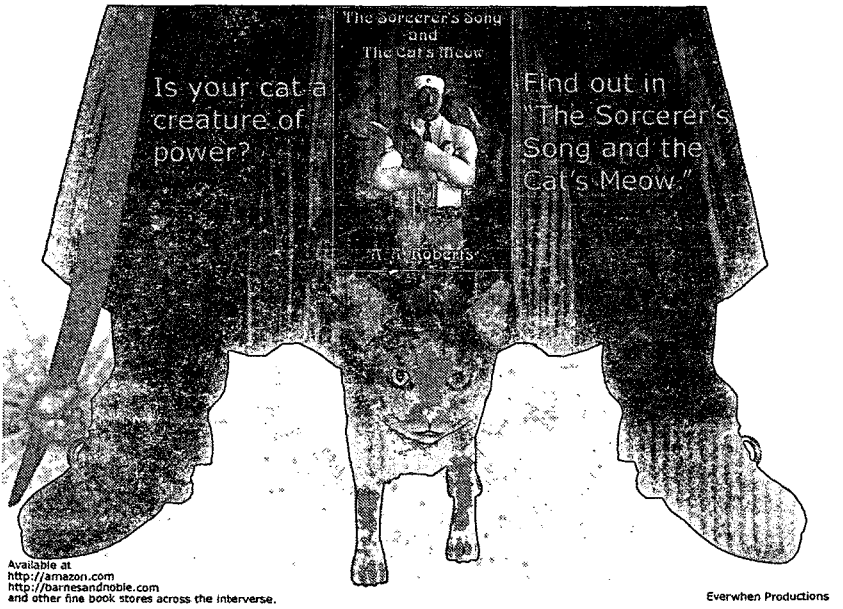

then withered. This was a place of many seasons, Nathan reflected as he gasped his way on, although it belonged more to winter than it did to summer, and more to autumn than to spring.

As much as anything, the hunched figure that lay ahead seemed to be shaped out of the ever-changing territories of the air. Not just windy days, or the sudden bluster of summer thunderstorms, but also the hot stillness of afternoons that seemed to be without prospect of any wind at all, at least until you saw something separate itself from the gray shimmer of the world below. The wind-seller had his sack laid open beside him. He was gathering the tumbled sticks of a nearby willow that shivered and danced its wild arms. Somewhere inside Nathan's head, that weathercock was still screaming, and with it came a sobbing agony in his lungs. He knew he didn't have the strength left to tell the wind-seller what he wanted, and it was a release and a relief to him when the man simply held out his pale fingers, which looked like stripped willow themselves, and took from him that glorious red tress. As Nathan Westover stumbled and fell into the puddled mud, he saw the wind-seller's hands working not to release Fiona Smith's last breath, but looping her hair again to draw another, final, knot.

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Books To Look For

CHARLES DE LINT

No Dominion, by Charlie Huston, Del Rey, 2006, $13.95.

I WAS QUITE taken with Charlie Huston's fresh approach to vampires in *Already Dead* (2005). I wasn't happy with his authorial tic of using em-dashes instead of quotation marks to indicate dialogue (which he still does here), and it was a little bit like reinventing the wheel when he filled in the background of his vampires (they're basically stand-ins for street gangs and the Mob), but it read like film noir on paper, and his vampire P.I., Joe Pitt, made a fascinating point-of-view character.

This new book carries on from the last. Pitt is still the outsider vampire, but now his life has become that much harder because he made so many enemies in the first book. While looking for work — any kind of work — he gets involved in the investigation of a new drug that's recently hit the streets. It's a drug that affects vampires, which shouldn't be possible because the virus in their blood makes short work of any drugs or alcohol the vampire might have ingested.

So, the plot is different, of course, and Huston adds the subplot of Pitt's human girlfriend suffering from HIV, but mostly it's not so different from the first book.

Which isn't necessarily a bad thing. After all, readers devour mystery series where the protagonists solve crimes, book after book, and we look forward to and anticipate the sleuths using their own individual methods of doing so.

But I was nevertheless a little disappointed in this book because the first was so fresh and different, but now we're familiar with the strange underground of vampires with which Huston has peopled Manhattan. It feels a bit like business as usual, with the ante upped a little, to top the events of the first book.

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Much more interesting to me is Huston's take on a revamp of Marvel's *Moon Knight* that has all the freshness of *Already Dead*, though it's a different story and world, naturally enough, told in a different medium.

But with *No Dominion*, while I enjoyed Pitt's second outing here, I'm not sure I'll go on to read a third.

Brother Odd, by Dean Koontz, Bantam, 2006, $27.

On the other hand, Dean Koontz has got the series trick down just pat — if we ignore the fact that it's been something like seven years and he still hasn't given us the third and final book to finish the story he began with *Fear Nothing* (1998) and *Seize the Night* (1999). But we will ignore that fact (after having conveniently brought it up; are you listening, Mr. Koontz? We want to know how that story ends) and talk about the book in hand, the third, and I doubt final, entry into the ongoing story of one Odd Thomas, a young diner cook from Pico Mundo, CA, who can see the dead.

He can feel them as well, but they can't communicate with him other than by touch, which makes it difficult for him to help them move on from this world, where they are trapped, to whatever waits for us in the next.

At the end of last year's *Forever Odd*, Odd retreated to a monastery where he hoped to make a new life for himself away from the busy turmoil of the world at large. But while Koontz could no doubt find a way to hold our interest in simply relating Odd's day-to-day life in St. Bartholomew's Abbey, with its picturesque setting (the High Sierra of California) and motley collection of monks and nuns, he's too much the storyteller to leave Odd content for long.

Having grown up in the desert, Odd has no experience with snow. So with a storm forecast, he stays up late, sitting by his window, to watch it unfold. Unfortunately, there is more out there in the night than simple wind and snow, and all too soon Odd is plunged back into the sort of misadventures he was trying to avoid by coming to St. Bartholomew's.

I've mentioned before in this column how Koontz's books have gotten leaner over the past few years. In *Brother Odd*, he stretches the prose out a little bit once more, but rather than slowing the action down, it enhances Odd's first person narrative. The story is told with warmth, and just a touch of humor,

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both of which echo Odd's character while also alleviating some of the grim elements that he has to tell us as the events of this long day and night unfold.

One of the reasons readers enjoy first person narratives so much is that, when they're done properly, it feels as though the character is telling them the story, one on one. There's a personal connection, and when the character is as engaging as Odd Thomas, we want to stay in his company — not just to find out what happens next, but because we are captivated by his voice.

And that's why I'm happy to say that, although this book wraps up the story begun in its pages, just as did the other two volumes in the series, the final scene of *Brother Odd* appears to set the stage for at least one more outing.

Fables: 1000 Nights of Snowfall, by Bill Willingham & various artists, Vertigo, $19.99.

I've mentioned the monthly comic book series *Fables* in this column before. It follows the various adventures and exploits of the characters we know from fairy tales and classics (the Big Bad Wolf, Snow White, Mowgli, etc.) as they live their lives hidden in Fabletown, somewhere in New York City.

They came here from their homeland, fleeing the armies of the Adversary, and now try to make do in our mundane world. What's fun about the series (which is up to issue fifty-six as I write this) is that the various characters retain their traits and magical abilities, but have adapted and changed — as we all do over time.

This new book uses prose and comic scripts to tell a variation on Scheherazade's Arabian Nights. This time it's Snow White telling the stories. She arrived in the land of the Arabian Fables as an ambassador from her own community, but soon finds herself in Scheherazade's predicament and ends up telling the Sultan stories to save her life (which apparently is what inspired Scheherazade herself to do so as well when Snow White leaves).

Snow White's stories deal with many characters familiar from fairy tales (Snow White herself, the Frog Prince, the witch from Hansel & Gretel, Old King Cole) and are set in the Homelands when the Adversary's armies are just beginning to invade. But just as with the contemporary New York stories in the monthly series, in *Fables: 1000 Nights of Snowfall*, we're given fascinating new insights and differing

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points of view from what we thought we knew about these characters.

The art ranges from quirky to wonderful, with my favorites being a rare collaboration between Charles Vess and Michael Wm. Kaluta, illustrating the prose sections with gorgeous full- and half-pages of art more reminiscent of story book illustration from the turn of the last century than modern comic book art.

If you like the monthly series, you'll love this book. And if you're unfamiliar with Willingham's strange take on fairy tales, this is an excellent place to come on board and see what the fuss is all about.

Suicide Girls in the Afterlife, by Gina Ranalli, Afterbirth Books, 2006, $8.95.

No, this slim volume isn't about those tattooed and pierced Goths and punks of Internet fame, but rather a look at the afterlife that awaits young women who end their own lives. It's a serious subject, and while the characters seem a little lighter of heart than you might expect, and there are some very funny — and sacrilegious — moments, the author has serious things to say. But that doesn't stop a lot of it from being irreverent and tongue-in-cheek.

We meet both the devil (he's a Goth) and Jesus (he's a hippie) in this book, as well as a number of other unusual characters as we journey with a young woman named Pogue to a strange hotel in the afterlife — a holding tank of sorts while Heaven and Hell are undergoing renovations.

How much you'll enjoy Pogue's story — with its Worm Ouroboros twist — will depend on how much you like nontraditional storytelling, but it's certainly a fascinating — and for this reader, successful — experiment.

Material to be considered for review in this column should be sent to Charles de Lint, P. O. Box 9480, Ottawa, Ontario, Canada K1G 3V2.

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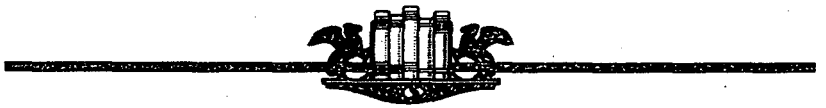

BOOKS

JAMES SALLIS

Three Days to Never, by Tim Powers, William Morrow, 2006, $25.95.

Un Lun Dun, by China Miéville, Del Rey/Ballantine Books, 2007, $17.95.

LITERATURE and history both set out to explain the apparent world to us, to demonstrate, to witness. Literature does this by making up characters, events, populations, and settings; history, purportedly by amassing fact. But increasingly we understand that the divide is not so great as we thought. With history, we snare facts in our net, then go about trying to suss out their possible and always slippery connections. Our nets will only snare so much, and some of what they do catch, we throw back. History is finally as mutable as memory.

Fantastic literature, arealist literature, sets out to explain the apparent world to us also, while at the same time having at its heart the absolute certainty of other, often unsuspected worlds existing behind, to one side, or in the very same place as this one. It sets a frame around mankind's life and place in the universe, then steps outside the frame.

Fantastic literature has, as well, a fine tradition of brilliant writers more or less following Voltaire's admonition to cultivate their gardens — imaginary gardens which they proceed to fill with real toads. Writers tend by their nature to be outriders; and some of the quirkiest, those who seem not to fit in even among other outriders, are drawn to science fiction and fantasy. I'm thinking here of people like Alfred Bester, Carol Emshwiller, Gene Wolfe, John Crowley.

From 1983's *Anubis Gates* to *Last Call*, *Expiration Date*, and *Declare*, Tim Powers's work is as instantly recognizable as any of these. Taking limbs from dark fantasy,

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branches from the paranoiac visions of Philip K. Dick and Thomas Pynchon, he has grafted them onto the currently popular subgenre of alternate history, bending history to his own, quite ahistorical imaginative ends, discovering in the process a singular and spectacular voice. His novels are crazy quilts stitched together from the most improbable material — slices and core samples, ragends and remainders of worlds that seem never to have been meant to coexist, much less collide.

In *Three Days to Never* we have (and this is the short list) a Shakespeare-quoting father and daughter, time travel, Albert Einstein, a rotting eyeless head used to communicate with the incorporeal, the Mossad, a blind assassin who sees through others' eyes, a lost Charles Chaplin film, 1987's Harmonic Convergence at Mount Shasta, a secret society in existence since Medieval days, ghosts lugging their perceptions and speech ever backward in time as their timelines are obliterated, broods of babies appearing whenever universes are breached.

We also have, of course, all the landmarks of Powersland to steer by: multiple story lines, heavy-duty plotting and characterization, the gritty and the fabulist chockablock, uncanny blends of cerebral invention and breakneck action, abrupt shifts in perception, casual use of ritual magic. And hovering above it all (as John Shirley has noted) the sense that beneath "the fabric of the mundane world, the chatter of the media, the artifacts of history, is a secret realm of vibratory significance." The sense that the miraculous is all about us.

The narrative centers about the search for a time machine invented by Albert Einstein, a device he recognized as far more dangerous than the bomb. It has resurfaced, and apparently been used, by an old woman who seems one moment to have been at home in California and, the next, dying on Mount Shasta during the Harmonic Convergence. On the trail of the device are Mossad operatives, agents of an age-old cabal, and, seemingly, an errant, runaway father. Not on its trail, yet at the intersection of all points, are twelve-year-old Daphne Marrity and her English-professor father Frank.

Here, from quite early in the novel when pieces of Powers's quilt first begin to come together, is Daphne discovering unsuspected abilities. She has been watching a videocassette of what she believed to be *Pee-wee's Big Adventure* but

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which is instead a lost silent film, a key — like the cement slab bearing Chaplin's handprint stolen from outside Graumann's Chinese Theater — to the time machine.

"And then the house lost its balance and began to tip over into the pit — for a moment Daphne couldn't feel the couch under her, she was falling — and in a panic she *grabbed* with her whole mind.

"The house lurched violently back to level solidity again, though the curtains in the front window didn't even swat; and black smoke was jetting out of the vent slots in the VCR." [51]

Mossad, Vesper, sub-agent, or relative, each of the supplicants has his or her own agenda. Charlotte wants to undo her fall and return to innocence, by whatever means prove necessary; she believes that gaining access to the time machine will make this possible. Blind, she sees through the eyes of others, and is to the Vespers simply a tool, used much like the Baphomet head that terrifies her.

"She had lit a cigarette to kill the spicy smell of the thing....

"Charlotte had tried to avoid seeing the awful black head, but at one point while she was using Racasse's eyes he had looked straight at it.

"Polished black skin clung tightly to the eyeless skull, and paisley-shaped panels of silver filigree had been glued or tacked onto the forehead, cheeks, nose and chin, like metal Maori tattoos — probably to cover worm holes, Charlotte thought nervously — and a slack ribbon around its neck swung back and forth underneath the wooden stand." [76 & 79]

Mossad operative Lepidopt wants to undo the Yom Kippur War. In the last days of that war, as he touched the Western Wall, much of his hand was blown away, the blow leaving behind a strange prescience. Twelve times in the twenty years since, he has, in the midst of daily life, realized that he will do some one thing never again.

"In 1970, three years after he had touched the Western Wall for the first and last time, he had attended a performance of Rimsky-Korsakov's *Scheherazade* at the Mann Auditorium in Tel Aviv, and as the last notes of the Allegro Molto echoed away, he had suddenly been positive that he would not ever hear *Scheherazade* again.

"Two years after that he had visited Paris for the last time; not long afterward he had discovered that he would never again swim in the ocean.... Just during this last

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year he had, for the last time, changed a tire, eaten a tuna sandwich, petted a cat, and seen a movie in a theater.... " [39-40]

Even as he, along with Charlotte and all the others, strives to *undo*, Lepidopt is himself being undone.

Everywhere here, Powers courts notions of private motive and public good, means and ends, utilitarianism, casuistry and the categorical imperative: the cracks, the crawlspaces, those jagged edges where lives have been torn away by violence, historical events, and personal suffering, and past which blows forever a dark, unappeasable wind. He reminds us that, just as the world we perceive around us may be only a part of the actual world, a single facet among many, an impression, so it may be with our time-bound perceptions of right and wrong.

Literature, it has been said, is a corrective to history. Reading Tim Powers, we are reminded how closely the two converge: how they help us try to understand, help us rise momentarily high enough to glimpse our place in mankind and mankind's place in the universe, help us go on.

There are few more fascinating world builders than China Miéville. Bas-Lag, the setting for *Perdido Street Station*, *The Scar*, and *Iron Council*, is by turn grotesque and enchanting, ever strange yet oddly familiar, a refracting mirror that catches up elements and eras of our own world and throws them together in high relief. His powers of invention seem boundless, his sense of the intertwining of the personal and political quite unlike anyone else's, his sensitivity to language immense.

Fantasy hardly comes darker, or more illuminating of our own world. I regularly read pages of Miéville to my students — the opening of *Perdido Street Station* in particular, detailing the love between Isaac Dan der Grimnebulin and the mute insect-woman Lin — and delight in watching students' eyes flare wide as they lean toward me, then, afterward, sit in silence. *That*, I tell them, is how one writes of the world's innate strangeness. *That* is what Aristotle meant by recognitions.

And now, from this spinner of some of the darkest and most complex work about, in four previous novels and in 2005's collection *Looking for Jake*, we have a young adult novel.

Miéville may be on holiday from Bas-Lag and New Crobuzon,

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but not from what most interests him. In no sense is this a watering-down or enervation, only a different way of getting at things. The internal dialogue has shifted, true — it is now with fairy tales and children's books rather than with tropes of classic fantasy, horror and science fiction — but the many engines of the narrative remain familiar. Even Miéville's political preoccupations are manifest: Un Lun Dun is ruled by a group of incompetent, corrupt bureaucrats called Propheseers; a war against the great enemy, the smog, exploits fear and claims of terrorism to consolidate power.

In some ways reminiscent of his first novel, *King Rat*, which was among much else a retelling of the Pied Piper legend set in an imaginatively reconstructed London, *Un Lun Dun* (UnLondon) is in part his version of the Alice in Wonderland books.

We have short chapters filled with whimsy, wondrous images, strange occurrences, odd comities, and dread.

We have a world where a book of debunked prophecies grows clinically depressed, men with inkwells as heads stroll about, buildings are composed of old typewriters and dead televisions, umbrellas flap and move about batlike, and a milk carton named Curdle serves as pet to our two adventurers, Zanna and Deeba. A world *bouleversé*, the forms familiar, their functions and import gone mysterious.

Miéville also takes his plot from the communal pot of YA fantasy: young person (here the Shwazzy, *choisi*, chosen) finds him- or herself drawn to another, unsuspected world to save it. But if nothing in our own world is quite as it seems, then neither is what Miéville dips from the common pot. In his version, the Shwazzy is down for the count from her first encounter with the evil smog, leaving the sidekick to carry on.

"There are fairy tales and debates with them all over the place in *Un Lun Dun*," Miéville has said in interview. And of weird fiction itself: "I think at its basic level, the weird...is a kind of pulp iteration of the estrangement that surrealism tries to create from everyday life." Thus the images in surprising, alogical configurations, the overlay of world and not-world, the reach for a convulsive beauty — all to the end of releasing us from the dailyness of our lives, to see those lives and our world anew: new focus, new frames, new wonder.

It all begins sweetly enough:

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"For the last few weeks, dogs would often stop as Zanna walked by, and stare at her. Once a little conga line of three squirrels had come down from a tree as Zanna sat in Queen's Park, and one by one had put a little nut or seed in front of her. Only cats ignored her." [9]

But then quickly, with cascades of the unkennable, the corner gets turned.

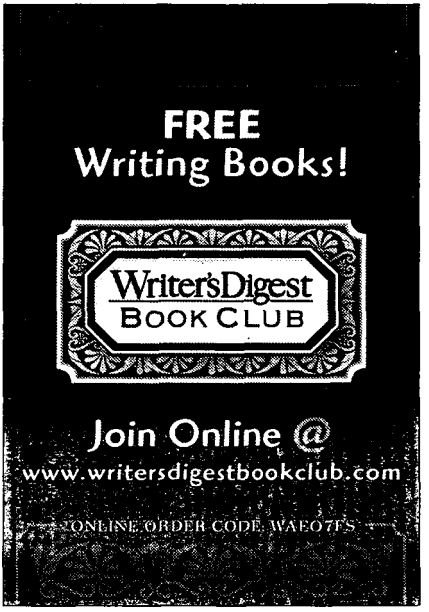
"Zanna spun the handle as if it were oiled. The noise of cars and vans and motorbikes outside grew tinny, like a recording, or as if it came from a television in the next room. The sound of the vehicles faded with the glow of the main road.

"Zanna was turning off the traffic. The spigot turned off all the cars, and turned off the lamps.

"It was turning off London." [23]

Welcome, my friends, to Un Lun Dun. And to Miévilleland.

Here we have the latest work of two masters of contemporary fantasy. An alternate London, an alternate history of our time. Look over one shoulder and you can see behind them a long train: Lord Dunsany, Mervyn Peake, Fritz Leiber, Michael Moorcock, M. John Harrison, Philip K. Dick, Gene Wolfe, Jonathan Carroll. Consciously honoring yet extending tradition, Tim Powers and China Miéville continuously break new ground, reminding us what fantasy at its best — with its free-floating regard, its essential ahistoricity, its plummet to the archetypes within us — is uniquely set to accomplish.



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When the High Country News *put out a call for stories about futures in which people have learned to live sustainably in the American West, they had high hopes. It turned out, however, that they received just one story that fit their stated goal of "a realistic assessment of people and their place in the landscape" — and it came from their own online editor, whom many of you know as the author of "Pop Squad," "The Fluted Girl," and "People of Sand and Slag."*

Mr. Bacigalupi says that after this story appeared in the June 26, 2006 issue of HCN, *it sparked a discussion of just how a deep drought might affect water rights in the West. Water managers and law experts were brought in, but nobody could produce anything more than wild guesses — of which this story was considered as good as any. And we think you'll agree it's a good yarn, too.*

The Tamarisk Hunter

By Paolo Bacigalupi

A BIG TAMARISK CAN SUCK 73,000 gallons of river water a year. For $2.88 a day, plus water bounty, Lolo rips tamarisk all winter long.

Ten years ago, it was a good living. Back then, tamarisk shouldered up against every riverbank in the Colorado River basin along with cottonwoods, Russian olives, and elms. Ten years ago, towns like Grand Junction and Moab thought they could still squeeze life from a river.

Lolo stands on the edge of a canyon, Maggie the camel his only companion. He stares down into the deeps. It's an hour's scramble to the bottom. He ties Maggie to a juniper and starts down, boot-skiing a gully. A few blades of green grass sprout neon around him, piercing juniper-tagged snow clods. In the late winter, there is just a beginning surge of water down in the deeps; the ice is off the river edges. Up high, the mountains still wear their ragged snow mantles. Lolo smears through mud and hits a channel of scree, sliding and scattering rocks. His jugs of tamarisk poison gurgle and slosh on his back. His shovel and rockbar snag on occasional junipers as he skids by. It will be a long hike out. But then,

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that's what makes this patch so perfect. It's a long way down, and the riverbanks are largely hidden.

It's a living; where other people have dried out and blown off, he has remained: a tamarisk hunter, a water tick, a stubborn bit of weed. Everyone else has been blown off the land as surely as dandelion seeds, set free to fly south or east, or most of all north where watersheds sometimes still run deep and where even if there are no more lush ferns or deep cold fish runs, at least there is still water for people.

Eventually, Lolo reaches the canyon bottom. Down in the cold shadows, his breath steams.

He pulls out a digital camera and starts shooting his proof. The Bureau of Reclamation has gotten uptight about proof. They want different angles on the offending tamarisk, they want each one photographed before and after, the whole process documented, GPS'd, and uploaded directly by the camera. They want it done on-site. And then they still sometimes come out to spot-check before they calibrate his headgate for water bounty.

But all their due diligence can't protect them from the likes of Lolo. Lolo has found the secret to eternal life as a tamarisk hunter. Unknown to the Interior Department and its BuRec subsidiary, he has been seeding new patches of tamarisk, encouraging vigorous brushy groves in previously cleared areas. He has hauled and planted healthy root balls up and down the river system in strategically hidden and inaccessible corridors, all in a bid for security against the swarms of other tamarisk hunters that scour these same tributaries. Lolo is crafty. Stands like this one, a quarter-mile long and thick with salt-laden tamarisk, are his insurance policy.

Documentation finished, he unstraps a folding saw, along with his rockbar and shovel, and sets his poison jugs on the dead salt bank. He starts cutting, slicing into the roots of the tamarisk, pausing every thirty seconds to spread Garlon 4 on the cuts, poisoning the tamarisk wounds faster than they can heal. But some of the best tamarisk, the most vigorous, he uproots and sets aside, for later use.

Two dollars eighty-eight cents a day, plus water bounty.

It takes Maggie's rolling, bleating camel stride a week to make it back to Lolo's homestead. They follow the river, occasionally climbing above

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it onto cold mesas or wandering off into the open desert in a bid to avoid the skeleton sprawl of emptied towns. Guardie choppers buzz up and down the river like swarms of angry yellow jackets, hunting for porto-pumpers and wild-cat diversions. They rush overhead in a wash of beaten air and gleaming National Guard logos. Lolo remembers a time when the guardies traded potshots with people down on the riverbanks, tracer-fire and machine-gun chatter echoing in the canyons. He remembers the glorious hiss and arc of a Stinger missile as it flashed across redrock desert and blue sky and burned a chopper where it hovered.

But that's long in the past. Now, guardie patrols skim up the river unmolested.

Lolo tops another mesa and stares down at the familiar landscape of an eviscerated town, its curving streets and subdivision cul-de-sacs all sitting silent in the sun. At the very edge of the empty town, one-acre ranchettes and snazzy five-thousand-square-foot houses with dead-stick trees and dust-hill landscaping fringe a brown tumbleweed golf course. The sandtraps don't even show anymore.

When California put its first calls on the river, no one really worried. A couple towns went begging for water. Some idiot newcomers with bad water rights stopped grazing their horses, and that was it. A few years later, people started showering real fast. And a few after that, they showered once a week. And then people started using the buckets. By then, everyone had stopped joking about how "hot" it was. It didn't really matter how "hot" it was. The problem wasn't lack of water or an excess of heat, not really. The problem was that 4.4 million acre-feet of water were supposed to go down the river to California. There was water; they just couldn't touch it.

They were supposed to stand there like dumb monkeys and watch it flow on by.

"Lolo?"

The voice catches him by surprise. Maggie startles and groans and lunges for the mesa edge before Lolo can rein her around. The camel's great padded feet scuffle dust and Lolo flails for his shotgun where it nestles in a scabbard at the camel's side. He forces Maggie to turn, shotgun half-drawn, holding barely to his seat and swearing.

A familiar face, tucked amongst juniper tangle.

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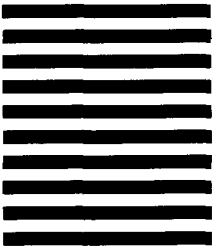

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"Goddamnit!" Lolo lets the shotgun drop back into its scabbard. "Jesus Christ, Travis. You scared the hell out of me."

Travis grins. He emerges from amongst the junipers' silver bark rags, one hand on his gray fedora, the other on the reins as he guides his mule out of the trees. "Surprised?"

"I could've shot you!"

"Don't be so jittery. There's no one out here 'cept us water ticks."

"That's what I thought the last time I went shopping down there. I had a whole set of new dishes for Annie and I broke them all when I ran into an ultralight parked right in the middle of the main drag."

"Meth flyers?"

"Beats the hell out of me, I didn't stick around to ask."

"Shit. I'll bet they were as surprised as you were."

"They almost killed me."

"I guess they didn't."

Lolo shakes his head and swears again, this time without anger. Despite the ambush, he's happy to run into Travis. It's lonely country, and Lolo's been out long enough to notice the silence of talking to Maggie. They trade ritual sips of water from their canteens and make camp together. They swap stories about BuRec and avoid discussing where they've been ripping tamarisk and enjoy the view of the empty town far below, with its serpentine streets and quiet houses and shining untouched river.

It isn't until the sun is setting and they've finished roasting a magpie that Lolo finally asks the question that's been on his mind ever since Travis's sun-baked face came out of the tangle. It goes against etiquette, but he can't help himself. He picks magpie out of his teeth and says, "I thought you were working downriver."

Travis glances sidelong at Lolo and in that one suspicious uncertain look, Lolo sees that Travis has hit a lean patch. He's not smart like Lolo. He hasn't been reseeding. He's got no insurance. He hasn't been thinking ahead about all the competition, and what the tamarisk endgame looks like, and now he's feeling the pinch. Lolo feels a twinge of pity. He likes Travis. A part of him wants to tell Travis the secret, but he stifles the urge. The stakes are too high. Water crimes are serious now, so serious Lolo hasn't even told his wife Annie, for fear of what she'll say. Like all of the

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most shameful crimes, water theft is a private business, and at the scale Lolo works, forced labor on the Straw is the best punishment he can hope for.

Travis gets his hackles down over Lolo's invasion of his privacy and says, "I had a couple cows I was running up here, but I lost 'em. I think something got 'em."

"Long way to graze cows."

"Yeah, well, down my way even the sagebrush is dead. Big Daddy Drought's doing a real number on my patch." He pinches his lip, thoughtful. "Wish I could find those cows."

"They probably went down to the river."

Travis sighs. "Then the guardies probably got 'em."

"Probably shot 'em from a chopper and roasted 'em."

"Californians."

They both spit at the word. The sun continues to sink. Shadows fall across the town's silent structures. The rooftops gleam red, a ruby cluster decorating the blue river necklace.

"You think there's any stands worth pulling down there?" Travis asks.

"You can go down and look. But I think I got it all last year. And someone had already been through before me, so I doubt much is coming up."

"Shit. Well, maybe I'll go shopping. Might as well get something out of this trip."

"There sure isn't anyone to stop you."

As if to emphasize the fact, the thud-thwap of a guardie chopper breaks the evening silence. The black-fly dot of its movement barely shows against the darkening sky. Soon it's out of sight and cricket chirps swallow the last evidence of its passing.

Travis laughs. "Remember when the guardies said they'd keep out looters? I saw them on TV with all their choppers and Humvees and them all saying they were going to protect everything until the situation improved." He laughs again. "You remember that? All of them driving up and down the streets?"

"I remember."

"Sometimes I wonder if we shouldn't have fought them more."

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"Annie was in Lake Havasu City when they fought there. You saw what happened." Lolo shivers. "Anyway, there's not much to fight for once they blow up your water treatment plant. If nothing's coming out of your faucet, you might as well move on."

"Yeah, well, sometimes I think you still got to fight. Even if it's just for pride." Travis gestures at the town below, a shadow movement. "I remember when all that land down there was selling like hotcakes and they were building shit as fast as they could ship in the lumber. Shopping malls and parking lots and subdivisions, anywhere they could scrape a flat spot."

"We weren't calling it Big Daddy Drought, back then."

"Forty-five thousand people. And none of us had a clue. And I was a real-estate agent." Travis laughs, a self-mocking sound that ends quickly. It sounds too much like self-pity for Lolo's taste. They're quiet again, looking down at the town wreckage.

"I think I might be heading north," Travis says finally.

Lolo glances over, surprised. Again he has the urge to let Travis in on his secret, but he stifles it. "And do what?"

"Pick fruit, maybe. Maybe something else. Anyway, there's water up there."

Lolo points down at the river. "There's water."

"Not for us." He pauses. "I got to level with you, Lolo. I went down to the Straw."

For a second, Lolo is confused by the non sequitur. The statement is too outrageous. And yet Travis's face is serious. "The Straw? No kidding? All the way there?"

"All the way there." He shrugs defensively. "I wasn't finding any tamarisk, anyway. And it didn't actually take that long. It's a lot closer than it used to be. A week out to the train tracks, and then I hopped a coal train, and rode it right to the Interstate, and then I hitched."

"What's it like out there?"

"Empty. A trucker told me that California and the Interior Department drew up all these plans to decide which cities they'd turn off when." He looks at Lolo significantly. "That was after Lake Havasu. They figured out they had to do it slow. They worked out some kind of formula: how many cities, how many people they could evaporate at a time without

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making too much unrest. Got advice from the Chinese, from when they were shutting down their old Communist industries. Anyway, it looks like they're pretty much done with it. There's nothing moving out there except highway trucks and coal trains and a couple truck stops."

"And you saw the Straw?"

"Oh sure, I saw it. Out toward the border. Big old mother. So big you couldn't climb on top of it, flopped out on the desert like a damn silver snake. All the way to California." He spits reflexively. "They're spraying with concrete to keep water from seeping into the ground and they've got some kind of carbon fiber stuff over the top to stop the evaporation. And the river just disappears inside. Nothing but an empty canyon below it. Bone dry. And choppers and Humvees everywhere, like a damn hornet's nest. They wouldn't let me get any closer than a half mile on account of the eco-crazies trying to blow it up. They weren't nice about it, either."

"What did you expect?"

"I dunno. It sure depressed me though: they work us out here and toss us a little water bounty and then all that water next year goes right down into that big old pipe. Some Californian's probably filling his swimming pool with last year's water bounty right now."

Cricket-song pulses in the darkness. Off in the distance, a pack of coyotes starts yipping. The two of them are quiet for a while. Finally, Lolo chucks his friend on the shoulder. "Hell, Travis, it's probably for the best. A desert's a stupid place to put a river anyway."

LOLO'S HOMESTEAD runs across a couple acres of semi-alkaline soil, conveniently close to the river's edge. Annie is out in the field when he crests the low hills that overlook his patch. She waves, but keeps digging, planting for whatever water he can collect in bounty.

Lolo pauses, watching Annie work. Hot wind kicks up, carrying with it the scents of sage and clay. A dust devil swirls around Annie, whipping her bandana off her head. Lolo smiles as she snags it; she sees him still watching her and waves at him to quit loafing.

He grins to himself and starts Maggie down the hill, but he doesn't stop watching Annie work. He's grateful for her. Grateful that every time he comes back from tamarisk hunting she is still here. She's steady.

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Steadier than the people like Travis who give up when times get dry. Steadier than anyone Lolo knows, really. And if she has nightmares sometimes, and can't stand being in towns or crowds and wakes up in the middle of the night calling out for family she'll never see again, well, then it's all the more reason to seed more tamarisk and make sure they never get pushed off their patch like she was pushed.

Lolo gets Maggie to kneel down so he can dismount, then leads her over to a water trough, half-full of slime and water skippers. He gets a bucket and heads for the river while Maggie groans and complains behind him. The patch used to have a well and running water, but like everyone else, they lost their pumping rights and BuRec stuffed the well with Quickcrete when the water table dropped below the Minimum Allowable Reserve. Now he and Annie steal buckets from the river, or, when the Interior Department isn't watching, they jump up and down on a footpump and dump water into a hidden underground cistern he built when the Resource Conservation and Allowable Use Guidelines went into effect.

Annie calls the guidelines "RaCAUG" and it sounds like she's hawking spit when she says it, but even with their filled-in well, they're lucky. They aren't like Spanish Oaks or Antelope Valley or River Reaches: expensive places that had rotten water rights and turned to dust, money or no, when Vegas and L.A. put in their calls. And they didn't have to bail out of Phoenix Metro when the Central Arizona Project got turned off and then had its aqueducts blown to smithereens when Arizona wouldn't stop pumping out of Lake Havasu.

Pouring water into Maggie's water trough, and looking around at his dusty patch with Annie out in the fields, Lolo reminds himself how lucky he is. He hasn't blown away. He and Annie are dug in. Calies may call them water ticks, but screw them. If it weren't for people like him and Annie, they'd dry up and blow away the same as everyone else. And if Lolo moves a little bit of tamarisk around, well the Calies deserve it, considering what they've done to everyone else.

Finished with Maggie, Lolo goes into the house and gets a drink of his own out of the filter urn. The water is cool in the shadows of the adobe house. Juniper beams hang low overhead. He sits down and connects his BuRec camera to the solar panel they've got scabbed onto the roof. Its charge light blinks amber. Lolo goes and gets some more water. He's used

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to being thirsty, but for some reason he can't get enough today. Big Daddy Drought's got his hands around Lolo's neck today.

Annie comes in, wiping her forehead with a tanned arm. "Don't drink too much water," she says. "I haven't been able to pump. Bunch of guardies around."

"What the hell are they doing around? We haven't even opened our headgates yet."

"They said they were looking for you."

Lolo almost drops his cup.

They know.

They know about his tamarisk reseeding. They know he's been splitting and planting root-clusters. That he's been dragging big healthy chunks of tamarisk up and down the river. A week ago he uploaded his claim on the canyon tamarisk — his biggest stand yet — almost worth an acre-foot in itself in water bounty. And now the guardies are knocking on his door.

Lolo forces his hand not to shake as he puts his cup down. "They say what they want?" He's surprised his voice doesn't crack.

"Just that they wanted to talk to you." She pauses. "They had one of those Humvees. With the guns."

Lolo closes his eyes. Forces himself to take a deep breath. "They've always got guns. It's probably nothing."

"It reminded me of Lake Havasu. When they cleared us out. When they shut down the water treatment plant and everyone tried to burn down the BLM office."

"It's probably nothing." Suddenly he's glad he never told her about his tamarisk hijinks. They can't punish her the same. How many acre-feet is he liable for? It must be hundreds. They'll want him, all right. Put him on a Straw work crew and make him work for life, repay his water debt forever. He's replanted hundreds, maybe thousands of tamarisk, shuffling them around like a card shark on a poker table, moving them from one bank to another, killing them again and again and again, and always happily sending in his "evidence."

"It's probably nothing," he says again.

"That's what people said in Havasu."

Lolo waves out at their newly tilled patch. The sun shines down hot

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and hard on the small plot. "We're not worth that kind of effort." He forces a grin. "It probably has to do with those enviro crazies who tried to blow up the Straw. Some of them supposedly ran this way. It's probably that."

Annie shakes her head, unconvinced. "I don't know. They could have asked me the same as you."

"Yeah, but I cover a lot of ground. See a lot of things. I'll bet that's why they want to talk to me. They're just looking for eco-freaks."

"Yeah, maybe you're right. It's probably that." She nods slowly, trying to make herself believe. "Those enviros, they don't make any sense at all. Not enough water for people, and they want to give the river to a bunch of fish and birds."

Lolo nods emphatically and grins wider. "Yeah. Stupid." But suddenly he views the eco-crazies with something approaching brotherly affection. The Californians are after him, too.

LOLO DOESN'T SLEEP all night. His instincts tell him to run, but he doesn't have the heart to tell Annie, or to leave her. He goes out in the morning hunting tamarisk and fails at that as well. He doesn't cut a single stand all day. He considers shooting himself with his shotgun, but chickens out when he gets the barrels in his mouth. Better alive and on the run than dead. Finally, as he stares into the twin barrels, he knows that he has to tell Annie, tell her he's been a water thief for years and that he's got to run north. Maybe she'll come with him. Maybe she'll see reason. They'll run together. At least they have that. For sure, he's not going to let those bastards take him off to a labor camp for the rest of his life.

But the guardies are already waiting when Lolo gets back. They're squatting in the shade of their Humvee, talking. When Lolo comes over the crest of the hill, one of them taps the other and points. They both stand. Annie is out in the field again, turning over dirt, unaware of what's about to happen. Lolo reins in and studies the guardies. They lean against their Humvee and watch him come back.

Suddenly Lolo sees his future. It plays out in his mind the way it does in a movie, as clear as the blue sky above. He puts his hand on his shotgun. Where it sits on Maggie's far side, the guardies can't see it. He keeps Maggie angled away from them and lets the camel start down the hill.

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The guardies saunter toward him. They've got their Humvee with a .50 caliber on the back and they've both got M-16s but they're slung over their shoulders. They're in full bulletproof gear and they look flushed and hot. Lolo rides down slowly. He'll have to hit them both in the face. Sweat trickles between his shoulder blades. His hand is slick on the shotgun's stock.

The guardies are playing it cool. They've still got their rifles slung, and they let Lolo keep approaching. One of them has a wide smile. He's maybe forty years old, and tanned. He's been out for a while, picking up a tan like that. The other raises a hand and says, "Hey there, Lolo."

Lolo's so surprised he takes his hand off his shotgun. "Hale?" He recognizes the guardie. He grew up with him. They played football together a million years ago, when football fields still had green grass and sprinklers sprayed their water straight into the air. Hale. Hale Perkins. Lolo scowls. He can't shoot Hale.

Hale says, "You're still out here, huh?"

"What the hell are you doing in that uniform? You with the Calies now?"

Hale grimaces and points to his uniform patches: Utah National Guard.

Lolo scowls. Utah National Guard. Colorado National Guard. Arizona National Guard. They're all the same. There's hardly a single member of the "National Guard" that isn't an out-of-state mercenary. Most of the local guardies quit a long time ago, sick to death of goose-stepping family and friends off their properties and sick to death of trading potshots with people who just wanted to stay in their homes. So even if there's still a Colorado National Guard, or an Arizona or a Utah, inside those uniforms with all their expensive nightsight gear and their brand-new choppers flying the river bends, it's pure California.

And then there are a few like Hale.

Lolo remembers Hale as being an okay guy. Remembers stealing a keg of beer from behind the Elks Club one night with him. Lolo eyes him. "How you liking that Supplementary Assistance Program?" He glances at the other guardie. "That working real well for you? The Calies a big help?"

Hale's eyes plead for understanding. "Come on, Lolo. I'm not like you. I got a family to look after. If I do another year of duty, they let Shannon and the kids base out of California."

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"They give you a swimming pool in your backyard, too?"

"You know it's not like that. Water's scarce there, too."

Lolo wants to taunt him, but his heart isn't in it. A part of him wonders if Hale is just smart. At first, when California started winning its water lawsuits and shutting off cities, the displaced people just followed the water—right to California. It took a little while before the bureaucrats realized what was going on, but finally someone with a sharp pencil did the math and realized that taking in people along with their water didn't solve a water shortage. So the immigration fences went up.

But people like Hale can still get in.

"So what do you two want?" Inside, Lolo's wondering why they haven't already pulled him off Maggie and hauled him away, but he's willing to play this out.

The other guardie grins. "Maybe we're just out here seeing how the water ticks live."

Lolo eyes him. This one, he could shoot. He lets his hand fall to his shotgun again. "BuRec sets my headgate. No reason for you to be out here."

The Calie says, "There were some marks on it. Big ones."

Lolo smiles tightly. He knows which marks the Calie is talking about. He made them with five different wrenches when he tried to dismember the entire headgate apparatus in a fit of obsession. Finally he gave up trying to open the bolts and just beat on the thing, banging the steel of the gate, smashing at it, while on the other side he had plants withering. After that, he gave up and just carried buckets of water to his plants and left it at that. But the dents and nicks are still there, reminding him of a period of madness. "It still works, don't it?"

Hale holds up a hand to his partner, quieting him. "Yeah, it still works. That's not why we're here."

"So what do you two want? You didn't drive all the way out here with your machine gun just to talk about dents in my headgate."

Hale sighs, put-upon, trying to be reasonable. "You mind getting down off that damn camel so we can talk?"

Lolo studies the two guardies, figuring his chances on the ground. "Shit." He spits. "Yeah, okay. You got me." He urges Maggie to kneel and climbs off her hump. "Annie didn't know anything about this. Don't get her involved. It was all me."

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Hale's brow wrinkles, puzzled. "What are you talking about?"

"You're not arresting me?"

The Calie with Hale laughs. "Why? 'Cause you take a couple buckets of water from the river? 'Cause you probably got an illegal cistern around here somewhere?" He laughs again. "You ticks are all the same. You think we don't know about all that crap?"

Hale scowls at the Calie, then turns back to Lolo. "No, we're not here to arrest you. You know about the Straw?"

"Yeah." Lolo says it slowly, but inside, he's grinning. A great weight is suddenly off him. They don't know. They don't know jack. It was a good plan when he started it, and it's a good plan still. Lolo schools his face to keep the glee off, and tries to listen to what Hale's saying, but he can't, he's jumping up and down and jibbering like a monkey. They don't know—

"Wait." Lolo holds up his hand. "What did you just say?"

Hale repeats himself. "California's ending the water bounty. They've got enough Straw sections built up now that they don't need the program. They've got half the river enclosed. They got an agreement from the Department of Interior to focus their budget on seep and evaporation control. That's where all the big benefits are. They're shutting down the water bounty payout program." He pauses. "I'm sorry, Lolo."

Lolo frowns. "But a tamarisk is still a tamarisk. Why should one of those damn plants get the water? If I knock out a tamarisk, even if Cali doesn't want the water, I could still take it. Lots of people could use the water."

Hale looks pityingly at Lolo. "We don't make the regulations, we just enforce them. I'm supposed to tell you that your headgate won't get opened next year. If you keep hunting tamarisk, it won't do any good." He looks around the patch, then shrugs. "Anyway, in another couple years they were going to pipe this whole stretch. There won't be any tamarisk at all after that."

"What am I supposed to do, then?"

"California and BuRec is offering early buyout money." Hale pulls a booklet out of his bulletproof vest and flips it open. "Sort of to soften the blow." The pages of the booklet flap in the hot breeze. Hale pins the pages with a thumb and pulls a pen out of another vest pocket. He marks something on the booklet, then tears off a perforated check. "It's not a bad deal."

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Lolo takes the check. Stares at it. "Five hundred dollars?"

Hale shrugs sadly. "It's what they're offering. That's just the paper codes. You confirm it on-line. Use your BuRec camera phone, and they'll deposit it in whatever bank you want. Or they can hold it in trust until you get into a town and want to withdraw it. Any place with a BLM office, you can do that. But you need to confirm before April 15. Then BuRec'll send out a guy to shut down your headgate before this season gets going."

"Five hundred dollars?"

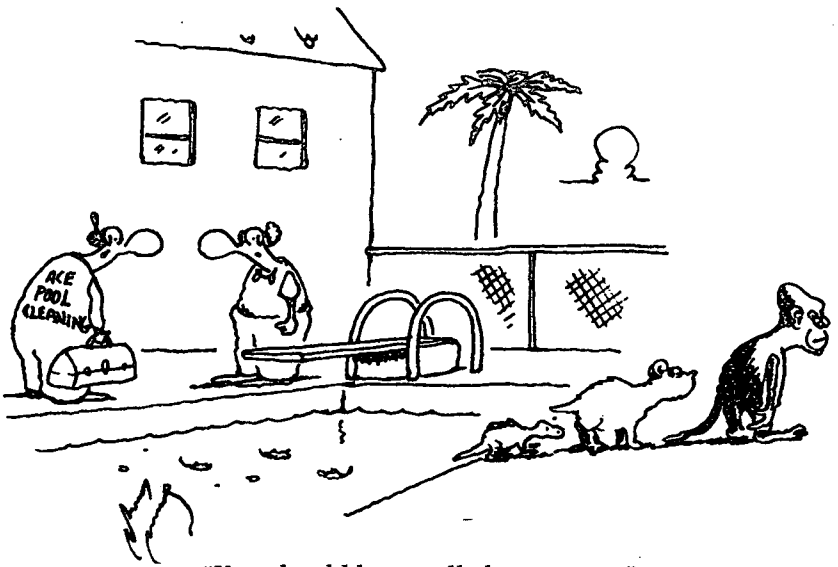
"It's enough to get you north. That's more than they're offering next year."

"But this is my patch."

"Not as long as we've got Big Daddy Drought. I'm sorry, Lolo."

"The drought could break any time. Why can't they give us a couple more years? It could break any time." But even as he says it, Lolo doesn't believe. Ten years ago, he might have. But not now. Big Daddy Drought's here to stay. He clutches the check and its keycodes to his chest.

A hundred yards away, the river flows on to California.



"You should have called me sooner."

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PLUMAGE FROM PEGASUS

PAUL DI FILIPPO

Grow Old Along with Me

"James Patterson has taken the plunge. So have Carl Hiaasen, Alexander McCall Smith, Neil Gaiman, Alice Hoffman and John Feinstein, among many others. And now it's Mary Higgins Clark's turn: she becomes the latest bestselling adult book author to try her hand at children's books. Next spring she'll publish her first picture book, *Ghost Ship: A Cape Cod Story....*"

— "Mary Higgins Clark to Become Children's Author,"

Publishers Weekly Children's Bookshelf, August 11, 2006.

PROGERIA Press is proud to present its line of quality Young Adult books for Spring 2007. As always, we strive to live up to our slogan: "You're never too young to grow up fast!"

All books recommended for Grades K-8, and available through the Stochastic Book Club for Precocious Youths.

The Corridor Showcase Atrocity Exhibition, by J. G. Ballard. Sixth-grader Travis, a student at Ronald Reagan Elementary School, receives the assignment of filling the showcase outside his classroom with educational materials. He assembles a surrealistic multimedia presentation documenting fifty years of information overload, paranoia, psychotic consumerism, and sexual fetishism. Not only does he receive an "A" from his teacher, Mr. Jack Kennedy, but the school's principal, Marilyn Elizabeth Monroe-Taylor, becomes his lover, serving as a fatal succubus and psychopomp.

Wading Pools of Lust, by Samuel R. Delany. In a fantastical city of polymorphous perversity, a young orphaned brother and sister under the tutelage of a debauched sea captain who might very well be the Devil himself experience a wide range of drug-fueled sexual adventures. [NOTE: repackaged text is

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identical with Delany's adult novel, *Tides of Lust*, with the legalistic façade of juvenile characters being referenced as "one-hundred-and-twelve years old" removed throughout.)

Deathbird Fairytales, by Harlan Ellison. Narrated by the corpse of the author's little dog, these various tales illustrate the emptiness of the moral universe, the malign antipathy of the Judeo-Christian God, the treachery and self-servingness of mankind, and the traumas associated with growing up in the Midwest in the 1940s.

The Littlest Black Dahlia, by James Ellroy. A serial killer is abducting and horribly mutilating spelling-bee contestants, and little Tiffany-Amber Lexicon appears to be next in line for ritual slaughter. Unfortunately, there is no escape for her, and she is subsequently defenestrated, excoriated and excruciated, all while demanding that those terms be used in an exemplary sentence.

A Lunchroom Unknown, by Philip José Farmer. When a meteor lands in the backyard of ten-year-old Wally "Wold" Newton, his normal maturation is accelerated and he is transfigured into a priapic figure whose exploits in satyriasis both confound and amuse his classmates.

Bedtime Pot Stories, by Paul Krassner. Famed iconoclast and Yuppie founder Krassner provides a companion volume to his 1999 anthology *Pot Stories for the Soul*. Dozens of middle-school correspondents reveal their initial encounters with smoking marijuana, including humorous stories of busts, school expulsions, bad deals, munchies, unintentionally hilarious newscasts, and parental ignorance.

Camp Gravity's Rainbow, by Thomas Pynchon. Boy Scout Tyrone Slothrop discovers that his odd upbringing has endowed him with a prophetic sensitivity to incidents of bullies administering "Indian sunburns." His talents are co-opted by the elite and Machiavellian clique of Scouts at Camp Gravity's Rainbow, and Slothrop is soon overtaxed into evanescense. PARENTAL ADVISORY: caca-eating scenes included.

Playground of Night, by John Rechy. Pre-teen Richie Youngman feels compelled to haunt the school-bus parking lot, offering to do homework for money. He experiences a

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major embarrassment when, in front of a large afterschool crowd, bad boys steal his belt, causing his pants to fall down and thus revealing that he's wearing Powerpuff Girl undies.

Last Bikepath to Brooklyn, by Hubert Selby. Discovered in Selby's papers after his 2004 death, this novel chronicles the adventures of the blithely naïve Tralala, a young girl of eleven whose newspaper-delivery route takes her into a rough neighborhood where tips are nonexistent and gangs of rival newspaper boys await to ambush her and subject her to multiple noogies.

Cosmic Capgun Trigger, by Robert Anton Wilson. A child's primer on hallucinogenic mushrooms, brain reprogramming, Masonic rituals, Mayan calendric apocalypses, Discordian philosophy and anarchist culture-jamming. Sample exercises in monkey-wrenching the dominant paradigm are provided, as well as pointers on going underground.

If these titles have intrigued you, be sure to visit the Progeria Press website and register for e-mail updates. You'll learn in advance about such future offerings as *The Lost Girlhood of Ramona Quimby*, by Alan Moore and Beverly Cleary; *Lord Horror's Guide for Making Friends*, by David Britton; and *Behold the Easter Bunny*, by Michael Moorcock.

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K. D. Wentworth says her current projects include a western fantasy for young readers and a pair of books she's co-writing with Eric Flint. Her charming new story owes its origin to a neighbor's escaped German Shorthaired Pointer, but we're hopeful that the rest of the story is more fancy than fact.

Kaleidoscope

By K. D. Wentworth

AFTER SHE TOOK EARLY retirement at fifty-two from her job at the university library, Ally Coelho's life ran along like an old car, occasionally missing on one cylinder or the other, but in the end, usually getting her at least close to where she wanted to go. Of course there were disappointments, especially in the relationship department, but she made do with whatever came along until the universe started amusing itself by playing dice with her life.

It had begun with a stray dog that bounded past the front yard when Ally was on her knees, weeding geraniums. The day was golden June, the temperature already climbing toward the nineties. Her auburn hair clung to her perspiring face like the calyx of one of her flowers.

The dog was a sleek German Shorthaired Pointer, lean as a racing hound and panting from the day's heat. Ally lured it with a bowl of water and then examined its tag, which revealed its name was "Sadee." She phoned the owner, who drove over in a silver van and collected it with many expressions of gratitude.

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That was how it had happened. But she also knew that the dog had merely glanced at her with freedom-crazed eyes, then careened off into the street where a Ford Tempo had knocked it into the gutter. That time she'd checked for a tag and called the owner, too, who had arrived with two weeping boys, eleven and nine, to collect Sadee's broken body in an old blanket for burial.

Both scenes played in her mind like dueling movie trailers. She remembered the boys' beaming faces when they hugged their retrieved companion and their tears as their mother picked up the pointer's carcass.

It wasn't one or the other. Somehow, it was both.

She knew she could resolve the question of which memory was real by calling the family, who lived less than a mile away, and asking after the dog, but she feared the answer. As long as she didn't inquire, the pointer might very well be frisking in its backyard, digging holes and playing ball. If it was buried under a tree somewhere, she did not want to know. So she didn't even drive past the dog's house, hoping to catch a glimpse. She just tried to put the whole matter out of her mind and worked on dividing her hostas for replanting.

But then her young friend Melinda, a former coworker from the library, called to say she and Carl, her longtime beau, were finally getting married. They would have a huge ceremony at the Methodist church and then leave on a wedding trip to Scotland. There were rings to buy, invitations and music to be selected, the perfect dress to be found. It was all joyous and anticipatory, as though Christmas and Thanksgiving both had arrived in June.

When Ally got up the next morning, though, she also knew that Carl had been transferred to Rio and not asked Melinda to go with him. Instead, he had said it was too far to carry on a long-distance relationship. They had best agree just to be friends. Melinda was inconsolable and no longer answered the phone.

Ally felt she must be going crazy. Both time lines ran in her mind, equally valid. Surely one of them had happened first, but when she tried to remember which, they danced through her memory, woven together and inseparable.

Later that afternoon, when she was pruning her roses, she realized that Melinda had caught Carl with another woman at the local bingo

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casino and ended the relationship herself. Melinda had booked passage on a cruise to Alaska, alone. Carl had gone out drinking and wrecked his car. His arm was broken in two places.

She would not think about it, Ally told herself firmly. It was just her imagination running away with itself. She would call her friends, Lynn and Ron, go out to dinner, and forget all this nonsense.

They accepted and agreed to meet her at a favorite local Mexican restaurant, the one that resembled a festive village inside and featured a two-story waterfall. But she waited there at the hostess station alone on the green vinyl couch, as parties of diners came and went, for forty minutes until her cell phone rang.

Where was she, Lynn wanted to know. They were at Caruso's, a popular Italian buffet, and the hostess wouldn't seat them until Ally arrived. Aghast, Ally pleaded car trouble and apologized, then went straight home and shut herself into the dimness of her bedroom. Hungry, head whirling, she curled up in her favorite old green throw.

The next morning, Saturday, she remembered that the three of them had eaten dinner at a P. F. Chang's restaurant, how Ron, engaging as ever, had teased her about the threads of gray in her auburn hair, and Lynn had told stories of her fourth grade classroom. They'd ordered the monstrously large chocolate cake, split it among the three of them, and still couldn't finish.

Her life seemed to be going on without her, splintering off into a hundred different directions. Maybe she needed Prozac, she told herself. Or Valium. Maybe it was time to hibernate, or she should talk to a counselor.

But no. She was just letting her mind wander. All she had to do was pay closer attention to what was going on around her and all this...confusion...would melt away.

Just after lunch, Lynn dropped by to see Ally as she was trundling the lawn mower around to the backyard. Her friend parked her Ford SUV on the street and got out, long legs tan and fit. Her dark hair was caught up in a clip on the back of her head and she wore threadbare cutoffs. "Wasn't that Barry a card last night?" she said as she walked across the grass. "I don't know when I've laughed so hard!"

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Lynn and Carl had brought a friend — a single gentleman her age — with them to Fuddrucker's, Ally realized. He'd had thinning silver hair and deep brown eyes half-buried in smile lines. He worked at the zoo with the hoofed animals, technically known as "ungulates," specialized in zebras, and had been divorced for five years. She stared at Lynn, clutching the lawn mower's battered handle, unable to speak.

"He wants to go out with you." Lynn waved a persistent fly out of her face. "It's okay that I gave him your phone number, isn't it?"

"Sure," Ally heard herself say, though her voice trembled. Sweat soaked the back of her old T-shirt. "He was quite — charming." And he had been, she knew now. How could she have forgotten?

"Who knows?" Lynn said with an affectionate smile. "This could be the start of something big."

BARRY CALLED that afternoon. They made a date for that evening, dinner at a retro diner that served wonderful milk shakes, and then a movie. Ally hadn't been out on a real date for more than a year now. Sweet old-fashioned anticipation washed through her, laced with a bit of fear. What if he hadn't really called? Any minute now, she might remember how much he'd disliked her.

But the day wore on and the date stayed firm. Maybe she'd just dreamed all those other things. Maybe she'd even go see the pointer's family and assure herself that Sadee still romped in her own backyard. Everything would be all right.

She dressed in a cool white summer skirt with her favorite aqua blouse and met Barry at the door. He was taller than she remembered and mostly bald. His lips were thinner, and he didn't look like he found much in life amusing.

"Did you work at the zoo today?" she asked as they walked to his car. The air was hot and sticky, and she fanned herself with one hand. Cicadas were droning like a Greek chorus in the neighborhood trees.

"I sell life insurance," Barry said, giving her a sideways glance. "I thought Lynn told you that." He opened the car door. It was a black Jaguar, low-slung, sleek, and somehow menacing.

Ally slid in across the fine leather seat, heart thumping.

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They drove to Finelli's, a shadowy Italian restaurant staffed by sneering waiters, to eat bruschetta and garlicky ravioli. He related mind-numbing tales of his best sales months, the reluctant clients he'd coaxed aboard, and the thrill of exceeding his quotas, then drove her to a claustrophobic club to listen to progressive jazz.

The discordant music washed over her, battering her nerves. Each chord seemed to reinforce all the strangeness of the last few days. She knotted her fingers. What had happened to the other Barry, the one with the shy smile? That was who she was supposed to see at her door tonight, not this slick stranger with his intimidating expensive car.

It was like the universe was playing tricks on her, tantalizing her with the promise of one thing, then sending her quite another. All her life, she had determinedly dealt with whatever came her way, but she didn't know how to cope when everything kept changing, second by second.

He took her home at midnight, and they parted with only a chaste peck on the cheek. She wasn't to his taste, she was quite certain, and she had definitely been expecting someone else when she'd answered the door.

Her sleep was filled with dreams of a silver-haired Barry who charmed her with tales of fractious zebras and red-spotted deer. They finished huge chocolate milk shakes, then left the diner, skipping the movie to walk the zoo after hours, where he pointed out the different ungulates in their paddocks by silvery moonlight.

When she woke, though, that scenario stayed only a dream, the night with insurance salesman Barry a reality. She was disappointed. Though the chronic changes of the last few days had been disconcerting, just this once, a different outcome would have been welcome.

Insurance-Barry didn't call again, nor did she expect that he would. Most likely he'd made the date with someone else, too, a different Ally, who was sure and sophisticated, twenty pounds slimmer, well versed in progressive jazz, and decked out in tottery high heels. Perhaps the universe had played a trick on him, too. If so, she was sorry for her part in the deception.

Thereafter, life calmed down for a few days, running only on a single track, almost boring. Lynn called to see how her date had gone, but wasn't

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surprised. "He already has four ex-wives," she said. "I was surprised you agreed to go out with such a jerk. Ron only asked him to sit down with us at dinner because it was obvious he wouldn't go away."

Of course, she hadn't agreed to go out with that particular Barry, but she couldn't explain that.

At loose ends that afternoon, after watering her backyard impatiens, Ally drove across town to the zoo and walked its winding pathways for hours. The ungulate paddocks were just as she'd dreamed them, though not nearly as glamorous by daylight. She hung on splintery wooden fences and studied water buffalo, camels, giraffes, and the exotic okapi with its striped legs. Large and small, they each moved with a grace that brought peace to her heart.

"Lovely, aren't they?" a voice said behind her shoulder.

She looked around. "Barry?"

His silver hair gleamed in the late afternoon sun. His eyes were half-buried in smile lines. "Have you been here before?" he asked. His name was stitched in red thread across the khaki shoulder of his keeper's uniform.

"No," she said slowly, heart thumping, "but I've thought about it." She watched the stately giraffe amble across its paddock, ears waggling. "It's a bit like my gardening, so many different varieties, each with its own requirements for water, sunlight, and food."

"Exactly." He leaned on the rail beside her and gazed at the giraffe as it stretched its elegant neck to nibble oak leaves. His face creased in thought. "Most people prefer the big cats, though, because they're so dramatic, or the reptile house for sheer shock value."

"They have their own attractions," she said, "but I've been dreaming about these."

"I'm pretty much finished with my duties for the day," this Barry said. "Would you like a backstage tour of the facility?"

So they walked through the barns as he explained each species, what was special about it, what unique care it required. The smell of baking earth, hay, and feed filled the air, along with the redolence of dung. She watched his face more than listened to his words. He loved his work — in fact, in many ways, he *was* his work.

The zoo closed at six, so he walked her back to the entrance as families

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of tired children drifted toward the parking lot. "This was lovely," she said, stopping beside the pond that isolated Monkey Island. The green water rippled, and then a turtle head broke the surface to stare at them. "Thank you so much."

"We're always looking for volunteers," he said, "especially docents to handle tours."

"I would like that." She fumbled in her purse for a stray scrap of paper, then wrote her name and number. "Please give my information to the proper authorities."

She drove home in a warm joyous haze. She had taken her fate into her own hands, and for once things had come out at least close to the way she wanted.

The next morning, she knew that she had encountered only a mumbling man named Art working the ungulates section of the zoo. She'd walked for hours and seen nothing of interest but animals half-stultified by the intense heat. Now all she had to show for the adventure was a sunburn.

But the afternoon with Barry had happened too. They both were true. When the phone finally did ring, it was like an electric current ran through her — but it was only Melinda, planning her Puerto Vallarta honeymoon, not Barry, or even the zoo, confirming her offer to volunteer.

She met Lynn for lunch at a local sandwich outlet and ordered a steaming meatball sub. "That wretch Barry called Ron last night," Lynn said as she slid into the booth. "He had the nerve to ask us if we had any friends with a bit more 'go.'"

Insurance-Barry, Ally hoped, not Zoo-Barry. "Well, he's certainly not my type," she said. "Ron should do it, if he wants."

"So he can insult another friend of ours?"

"This is bald Barry, isn't it?" Ally asked as the blood pounded in her ears.

"Bald as a billiard ball," Lynn said, "if you don't count that silly comb-over." She'd only ordered a salad and now picked at a cherry tomato perched on top.

They chatted through the rest of the meal, then Lynn looked at her watch. "Goodness!" she said. "I have to drop by school to pick up Carina for her doctor's appointment."

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"Carina?" Ally's fingers gripped the plastic soda cup too tightly. It crunched in, portending collapse.

"My *daughter*," Lynn said with a wry smile as she picked up her purse. "*Your* goddaughter. *That* Carina."

Lynn and Ron had no children. But with a rush, Ally realized they had three: two boys who were excellent students, currently in third and fifth grade, and then Carina, sixteen, in high school, who was always getting into scrapes. She smiled as best she could, which wasn't very well at the moment. If this went on, she thought, she'd never have to worry about smile lines around *her* eyes. "Of course," she said, as a hot flush crept up her neck. "Give her my love."

THE ZOO NEVER called, nor did Zoo-Barry, though another zoo memory surfaced to take its place beside the others: a middle-aged zookeeper, a woman named Emma, who had stopped to chat as Ally watched the caribou. Emma had complained about the heat, her wages, her coworkers, and zoo patrons who fed the animals even though it was strictly forbidden. The woman had droned on and on into Ally's ear until she fled the zoo well before closing time.

Lynn's daughter, Carina, came by to drop off some gardening magazines, and Ally wondered how she could ever have forgotten that angular young face, topped at the moment by a bristle of outrageously red hair. "Are you dating anyone special?" she asked her goddaughter as she opened the front door.

"God, no, Aunt Ally!" Carina laughed. "This isn't *Leave It to Beaver!* No one *dates* anymore! That's so hopelessly — retro!"

"Yes, I suppose it is." Ally shared a Diet Coke with her, then watched the girl drive off on her orange motorized scooter.

Lynn and Ron had been seriously committed to the Zero Population Growth movement. They'd never wanted children, had in fact taken early steps to end their fertility. She knew that as well as she knew Carina's face.

Maybe if she didn't go anywhere or see anyone, things would calm down. All the alternate memories that kept bobbing like corks up into her consciousness involved people, so if she just stayed home, there would be nothing to drive her crazy.

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Zoo-Barry called that night with the schedule for upcoming docent training classes. She'd meant to turn down all potential interactions for the time being, but found herself agreeing to attend.

All the way across town to the zoo the next day, she kept telling herself he wouldn't be there, the Barry she wanted to see. It would be someone else, taller, skinnier, fatter, meaner, female, older, or younger. That was the only given she could depend upon these days. Every time she thought she had a handle on reality, it twisted out of her grasp like a snake, as though someone Up There were having a really good laugh at her expense.

Of course, it was possible, she thought with a shudder as she turned into the vast zoo parking lot, that she might be slipping into early Alzheimer's; but if so, she wanted to keep it to herself as long as possible.

Admissions checked off her name on a list, then sent her to an administration building. The day was already hot as she followed the sidewalks, dodging eager children towing balloons and detouring dropped Popsicles melting in the sun. Over on the east side of the zoo, one of the elephants trumpeted as though to welcome her.

When she reached her destination, most of the other potential docents were at least her age, older genial people with time on their hands and an interest in nature. She sat at the back of the room, perched on a metal folding chair, and listened to the zoo director, a tall lean woman with an intense manner and braided graying hair, as she explained their educational "mission statement."

Barry was nowhere to be seen. Perhaps he was feeding the elk, she thought, or maybe whatever Barry was in existence today liked working with the tigers or the penguins instead, and had no time for the poor ungulates.

The trainees split into small groups, each led by an experienced docent, and went out into the zoo to start learning the facility. Ally's instructor was a seventyish man named Oliver who had volunteered here for eleven years. The gorillas were his passion. He knew everything about them, regarded them, in fact, as surrogate children and visited them even on days when he wasn't working.

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She found them unsettling, though, their gaze so humanlike and yet so alien, and was relieved when their group moved on to the Large Cat Pavilion.

A sinuous black panther, sprawled in the midst of a faux jungle, stared through the glass as they walked into the air-conditioned coolness. Its golden eyes were heavy-lidded, its manner disdainful. A man in a khaki uniform and work boots was examining the exhibit, checking off items on a clipboard. He had more hair than Barry, was a bit shorter, a tad stouter around the middle.

He turned around as Oliver was explaining the history of the two cats on display, and she felt her cheeks warm. "Barry!"

The man smiled uncertainly. "I'm sorry. Have we met?"

This Barry had blue eyes rather than brown, but he was pretty much the same guy. "Back when you worked the Ungulates area," she said, easing away from her docent group as Oliver droned on about feeding schedules and the success of the breeding program. "You were the one who inspired me to volunteer."

"Gosh." Barry scratched his head. "That's been a good two years now. You'll have to forgive me. I'm not very good at remembering faces, Ms. — ?"

"Coelho. Allison Coelho. My friends call me Ally." She put out her hand and he automatically accepted it. His grip was warm and firm, and, this close, his uniform gave off the aroma of sun-warmed hay. Her head whirled and she had to make herself release his fingers.

"Are you going to specialize in one particular area," he said, glancing at the trainees, "or work as a general guide?"

"I'm especially fond of the ungulates," she said.

"Really?" He smiled and there were all those smile lines, nested at the corners of his eyes, just as before. "We don't get too many volunteers requesting that area. Ungulates were my particular favorites until I got promoted. I still spend as much time with them as I can manage."

He fished in his pocket, came up with a battered black case, and removed a card. "Please feel free to call me if you have any questions after you complete your training."

She clasped the card in nervous fingers. "Th-thank you," she managed as he tucked the clipboard under his arm and strode back out into the fierce June sunlight.

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On the other side of the glass, the panther leapt to its feet and snarled. Its eyes, she noticed, had gone green.

Twice a week thereafter, Ally reported for docent training, but never saw Barry again. Once she asked about him at Admissions and was told no one named Barry worked on the staff. After that, she was afraid to ask, as though her conscious efforts forced him farther away in this vast river of possibilities that was carrying her along.

Carina dropped by again, decked out in a nose ring and dog collar, and shyly admitted that she was hanging around quite a bit these days with a guy in her "posse" by the name of Jerret. "Not that we've got a thing for each other," her goddaughter said defiantly, waving a Twinkie in the air like a conductor's baton. "We just, like, see eye to eye, some of the time, and I'm way better in math than he is. The poor slob can use all the help he can get."

Hang onto him, Ally wanted to say. If you're not paying attention, the universe can sweep him away any second. But she just smiled and opened a second package of Twinkies, Carina's current poison of choice.

After two months, Ally qualified as a docent and began taking small tours out on her own, mostly groups of unruly children who thought the zoo had nothing to offer that they couldn't see more often and better on television.

Whenever she passed the ungulate paddocks, she always remembered that marvelous dream when she and Barry had walked the zoo by moonlight. Of all the things her wayward mind insisted upon remembering, this was the only one that had never really happened.

Every time one of the male zoo staff passed, she checked his uniform, but indeed Barry did not seem to work here anymore. She wondered if he'd become Insurance-Barry for good, or perhaps a plumber or car salesman. Even if she could have located one of them, those Barrys were not the one she wanted. Instead, she applied herself to what she did have, accepting extra tours when no one else was available, learning more and more about the animals, so that the job was its own reward.

Carina had quit dropping by, and it seemed that Lynn and Ron had no children again. Lynn had looked at her strangely the last time she'd asked after her goddaughter, so now she just waited for the subject to be brought

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up, and for the last month, it never had been. Ron and Lynn were planning a trip to Greece, in fact, which they never could have afforded if they had three children to put through college.

Ally felt mired in this life where nothing was certain. Everyone she liked kept going away — Barry and Carina, and even that stupid dog she'd rescued, which insisted on being equally dead and alive in her memory.

One Wednesday, she reported to the zoo and met her tour group in the late afternoon, a father and his four children. According to her slip, the three girls were three, six, and seven, the boy, fourteen. They waited for her at the pond around Monkey Island. The father, tall and silver-haired, turned to her.

It was Barry, or a version of him anyway, more angular and careworn than she'd last seen him, his face grooved with sadness. "Ms. Coelho?" he said, and held out his hand. "I'm Barry Frey and these are my children, Anna, Sylvie, Marty, and Brent."

She took his hand, trying not to stare. The first two Barrys she'd met had been divorced. Had any of the others been married? She'd never known. She made herself smile. "Shall we start with the giraffes?"

They strolled through the sweltering August afternoon, seeking shade as often as possible. The girls were entranced with the stately giraffes. They hung on the fence and pointed, though she could tell the boy was already restless.

"They lost their mother at Christmas," Barry confided as they left the giraffe paddock and headed toward the water buffalo. "I keep trying to find ways to distract them, but nothing really works."

"Maybe Brent would like to volunteer with the Zoo Teens program," Ally said. "It's quite popular with young people, and he might meet some new friends." Carina, she realized, was doing such volunteer work, mostly in the Raptor House. The owls were her goddaughter's favorites. She was even collecting grisly owl pellets made of mouse skeletons for her next year's science project.

After the tour, they dropped by the administration building and signed Brent up. His eyes looked alive for the first time that day as he read the brochure. Barry thanked her and then bundled his family into a dark green Honda.

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So many Barrys, she thought bemusedly, as they drove off, each with his own attractions and problems.

Thereafter, the universe seemed to relent. She ran into Barry almost every day, or at least some version of him. One was a concrete contractor who had come to repair the seal pool. He had a stronger brow than Zoo-Barry and a badly healed broken nose. Another was a gap-toothed deliveryman trundling in cartons of frozen confections for the concession stand. There was White-Collar-Barry, complete with briefcase, auditing the zoo's finances, and Advertising-Barry who was putting together a media campaign to increase zoo attendance. She met Grant-Barry who was writing grant applications for the zoo and Mayor's-Aide-Barry who was scheduled to conduct a press conference on-site about zoo funding.

So many Barrys made her head swim, too much of a good thing, and in truth, she still longed for Zoo-Barry, who had an openness most of the others lacked. Oftentimes, that dream walk in the moonlight seemed truer than anything that had actually happened.

One evening in early September, just after she'd finished watering her garden, the doorbell rang. She opened it and found Barry, or at least *a* Barry, standing there. This one looked tan and genial, dressed in carefully pressed jeans and a blue-checked shirt. They had a date, she realized, a movie out at the old Admiral Twin, the only drive-in theater left in town.

Her face was smudged, her clothes sweaty and damp from wrestling with a leaky hose. "I — " she said.

Barry laughed and there were those smile lines again. It was *him*, she thought with a swell of hope.

"You forgot, didn't you?" He stepped inside and swept her into a hug. "I love it that you get so carried away with your garden. It's all right. We still have plenty of time for you to change your clothes."

They'd been dating for three months, every Friday night like clockwork. The memories surfaced in her head as she darted back to the bedroom and peeled out of her dirty clothes to shower. The hot water beat at her, and she used juniper-scented soap, his favorite. They'd been good months, too, and recently he'd introduced her to his grown children, Brent and Marty. Things seemed to taking a more serious turn, their times together rich with promise.

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Tears bubbled up in her eyes. Tomorrow she'd wake up and realize Barry was married to someone else. The two of them would have quarreled, or he'd be dead. His children would hate her, or he would have a job in Siberia, so that they'd never met at all. It was like being on the old-fashioned merry-go-round where you kept coming around to see the brass ring, then being whirled away again, empty-handed.

She dressed in a beige skirt, sandals, and a lacy cotton blouse, and grabbed her purse. They headed out through the firefly-laced dusk to the movie (something about treasure and blowing up trains — she never did get the title straight) and snuggled like two kids the whole feature.

The next morning, she woke next to a warm presence pressed close to her back. "Barry?" She put out a hand and traced a shoulder nestled against hers.

"Mmmm?" he said.

They had made love for the first time last night, she remembered. It had been slow and sweet and —

Utterly wonderful. And the universe had let her keep it.

Smiling, she got up and made him chocolate chip pancakes from scratch. He sat across from her at the kitchen table, talking about his plans to acquire a new zebra stallion from the San Jose Zoo. The current stud had gone a bit senile, it seemed, and preferred the company of his own sons to receptive mares.

She watched him, entranced. Every moment seemed precious because tomorrow she would remember it a different way. "I have to work this afternoon," Barry said, finally laying aside his fork. "George Spencer is off and I'm filling in."

"I'll go in, too," she said hastily, afraid if she took her eyes off his genial face for a second, he'd turn back into Insurance-Barry or any one of his thousand other iterations. "Maybe they need some help somewhere."

Barry smiled and pulled her into his arms. He lowered his face and murmured into her hair, "They always do."

By the time they'd gotten to the zoo, however, she remembered how they'd agreed last night to "put the brakes on," as he'd termed it. His son, Brent, was getting married next month and wanted Barry to walk his

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ex-wife, Brenda, into the church and then sit at her side, in some ghoulish fantasy of "if things look all right, then they are."

Ally wasn't invited to the wedding, because that would make Brenda unhappy. It was Brent's big day, after all, Barry said. He was sure Ally understood.

And Ally did understand, all right. The universe was having at her — yet again.

They emerged from his Jeep Wrangler in the parking lot. The asphalt steamed up at them, and he waved at her wearily. "Okay, meet you back here at five?"

Somewhere, she knew, the universe was laughing. It had once again showed her what she most wanted in the whole world, then swept it away before she could even catch her breath.

She spotted Carina, just beyond the Admissions booth, carrying a broom and walking with a group of Zoo Teens toward the penguin exhibit. Her sometime goddaughter had pink hair today and looked enthused as Ally had rarely seen her. This roller-coaster ride was at least doing *her* some good.

Ally whirled on Barry, who was startled and stepped back. "No," she said with a forcefulness entirely foreign to her orderly soul, "it is not okay with me!" She glanced up at the sky. "Do you hear that?" Seizing his face in her hands, she pulled him down to her for a desperately passionate kiss, the likes of which she could never remember planting on anyone before, Barry or not.

His arms encircled her, and they stood locked together in the middle of the parking lot until someone passing snickered. "Hey, gramps, get a room!"

Barry laughed and broke the kiss, though he still held her close. That night at the drive-in, she thought frantically, trying to hold on to this particular slice of reality, smile lines, silver hair, a warm and welcome presence in bed. He shimmered, as though she were seeing him through waves of heat. His hair thinned, receding even as she looked.

Insurance-Barry, she thought grimly. "No!" she shouted at the universe. "Not this time!" She kissed him again, more insistently, until her brain had the consistency of warm custard. Her knees threatened to give way and she could think of nothing beyond this moment.

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"I— " Barry stopped, apparently unable to continue his thought. His mouth gaped as he stared down at her, now wearing the concrete company's black uniform.

They'd been married for ten years, her memory told her, and miserable for nine. Her stepchildren hated her and had driven them apart. She'd secretly consulted a divorce attorney just two days ago. Barry was a selfish, grasping, miserly —

She threw her arms around him again and held on, though she could feel his confusion. She wanted her one true Barry, no one else!

The parking lot wavered, and then an industrial park stood in place of the zoo, which had been shut down years ago by the city as an unpopular, unprofitable enterprise. Auto glass was now fabricated here and wooden pallets for shipping.

There was no Barry, no Carina, no wonderful old drive-in where you could watch movies under the starlight. Her arms were empty. She was standing alone. Her hands dropped to her sides.

Why did the pieces of her life keep shifting, falling into new configurations — some beautiful, others plain, or boring, or even outright depressing? Had she committed some great unpardonable wrong for which she had to keep paying over and over again? It was like something basic inside her head had come unstuck. Maybe she *was* developing Alzheimer's.

"I want it back," she said hoarsely to the sky in the busy parking lot as massive delivery trucks maneuvered past her. "I want *him* back!"

The universe, of course, paid no mind.

BY THE NEXT morning, she had the zoo again and her volunteer job as a docent, but not Barry. They'd never met, her rogue memory told her, as she poured coffee into a travel mug, though she had caught sight of him working in the giraffe paddock once. She moved through her day in a daze, speaking when required, being polite to her tour groups.

Even her garden at home gave her no pleasure. The hostas seemed gray and unreal, the geraniums terribly ephemeral. Her little house, so snug and reassuring before, seemed likely to become a pizzeria when she wasn't looking, or the lobby of a bank. Perhaps she would wander

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homeless then, begging for quarters at intersections with a hand-printed sign. Nothing was for certain. Nothing lasted, and she couldn't do anything about it.

That evening, one of the Barrys called, but she just hung up before she figured out which of his many versions it was. Even if this was the right one, it hurt too much to spend time together just to have him snatched away mid-kiss.

He called again, every night for a week, but she could not bear to exchange a single word with him.

Finally, toward the end of September, her friend Melinda stopped by. When Ally opened the door, all of Melinda's possible lives danced through her mind, equally real: Melinda's wedding, abandonment, honeymoon, Carl's betrayal. "How — are you?" Ally said unsteadily, having no way to tell which particular Melinda had come to see her.

"I've brought the honeymoon pictures," Melinda said, sweeping past her into the living room. "But the real question is — how are *you*?" She flung herself down on the green-sprigged couch, dislodging an open gardening book to the floor, and gazed at Ally disapprovingly. "You're breaking his heart, you know."

"'*His* heart'?" Ally closed the front door and followed her inside.

"Barry's," Melinda said, as though Ally were a foolish little girl. "At least tell him what he's done."

"*He* — hasn't done anything," Ally said. Despair seeped through her.

"Of course not." Melinda pulled a huge packet of pictures out of her purse. "This is *Barry* we're talking about. He's so perfect, he makes my teeth ache."

"It's just — " Ally locked her hands together and stared at her tennis shoes, fighting tears. "No matter how hard I try, I can't have him. The — universe — won't let me."

Melinda sorted through the pictures, her expression intent. "Why in heaven's name not?"

"I don't know," Ally said. "I've tried and tried to make it work out, but, for whatever reason, it just isn't going to happen."

The doorbell rang. Ally excused herself to answer it and found a blue-haired, pierced-nosed Carina waiting on her porch, towing a pimply young man decked out all in black and three sets of earrings.

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"Aunt Ally," she said with a crooked, shy smile. "I brought Jerret by, so you could meet him, like you asked."

"Wonderful," Ally said, as her mind whirled. "Come — in."

She seated them in the living room, across from Melinda, and left the three of them examining the Puerto Vallarta honeymoon photos while she rummaged through the refrigerator in search of something to serve at this impromptu party.

The doorbell rang again. Who now, she thought crossly, Lynn and Carl? The next-door neighbors and their five children? A twenty-piece brass band from the local high school? All she'd wanted tonight was a chance to be alone and wallow in her misery. Wasn't the universe going to allow her at least that much?

She heard Carina answer the door, then toenails clicked across the parquet. A slim brown-spotted dog bounded around the corner into the kitchen and jumped joyously up to lick her. It was Sadee, the dog she both had — and had not — rescued. A dark-haired woman trailed behind, leash in one hand and something wriggling in her other arm. "Down, Sadee!" she said breathlessly. "I'm so sorry. We just wanted to drop by."

Ally dropped to her knee on the white tile kitchen floor and smoothed a hand over Sadee's sleek head. She was gloriously alive.

"Sadee had pups eight weeks ago, courtesy of her adventure that day when she escaped the yard," the woman said. "Because you rescued her, my sons wanted you to have the pick of the litter." She set a brown-furred puppy down on the floor and it promptly piddled. Sighing, she snatched up the paper towel roll from the counter. "From the thick coat, we think the father might have been an Akita, though it's hard to tell just yet. I know you might not want a dog right now, but you were so kind to Sadee when she got loose, and I promised the boys I would ask." The woman tore off towel sheets to soak up the puddle. "She's not housebroken, yet, I'm afraid."

"It's all right," Ally said, entranced. "No harm done." She gathered the bright-eyed ball of fuzz up and cradled it to her. The puppy yapped, then licked her neck, so soft and warm.

"It's real," she murmured to herself.

"Very real," the woman said wryly. "And I've got seven more just like her, in case one's not enough."

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She heard the front door open again, though this time the bell hadn't even rung. Were Carina and Jerret leaving already? Carrying the puppy, she went back into the living room. Barry was standing in the doorway, talking with Melinda.

"There you are," he said, turning to her.

Ally steeled herself for the disparate and unsuspected memories that were sure to surface. Which Barry was this? The one she'd married, with such unhappy results? The one who sold insurance? The one who fixed pools? Would he stay for a minute, or an hour, or even a day before the universe snatched him away?

"It's getting dark," he said, "and there's a full moon tonight. You always said you wanted to see the zoo by moonlight." He held out his hand.

Her dream. The puppy wriggled in her arms. "But you'll just leave me," she said to Barry — really, to the whole room, all of them, so transitory. "You always do."

"Hey, you're the one who won't answer the damned phone," Barry said. "I don't understand what that's all about."

"She just has trouble making up her mind," Melinda said, thrusting the honeymoon pictures back inside her purse. "Always has, as long as I've known her."

"Aunt Ally, you're so funny," Carina said reprovingly. "Don't be rude to the poor schmuck. Aren't you the one who's always telling me to 'take a chance'?" She lifted the struggling puppy from Ally's arms. It squirmed around and nipped her chin. She laughed. "Go with him. Jerret and I will dog-sit."

She did want to go, to make that dream image a reality, but how could she bear it when the universe snatched him away tomorrow?

"What is with you, woman?" Barry threw his arms around her. "You keep getting away from me. One day, you have blue eyes, the next, hazel. Your hair is short, then down to your shoulders. You live here and garden, then rent an apartment over on the other side of town and take up playing the piano. You volunteer at the zoo, but the next week, they've never heard of you. You say you love me, and then you won't even answer the phone. It's like I'm always on the trail of the real Ally, but she keeps hiding."

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My god, she thought. Had it been happening to him, too? She tilted her head and examined his brown eyes. It *was* him, the one she had been seeking now for months, like a rare and splendid color glimpsed at dawn never replicated throughout the rest of the day. "I'm sorry," she said. Her pulse pounded in her ears. "I promise that I haven't been running away."

"Then, come on," he said and towed her out the door before she could even grab her purse.

They used his keys and ID to get through the employees' entrance at the rear of the zoo. The bored security guard smiled and waved them past. Just as she had dreamed, moonlight made everything silver and mysterious: fences and the sleepy-eyed dun pony in the petting zoo, barns, even the stagnant old turtle pond. Bats flitted overhead, black against the deep blue night sky, and wind rustled through the treetops. The air was deliciously cool.

She and Barry toured the drowsing water buffalo, the giraffes, the okapi, the zebras. He tucked her arm over his, so that their strides kept time with each other. With every moment, Barry seemed more solid, more really there with her. But it had been like that before, and in the end, she was always left at the mercy of all the other less desirable Barrys who crowded him out.

"This is lovely," she said as they paused at the elk paddock. The lead bull's eyes glittered with reflected starlight. "But it won't last. It never does. I just don't think the universe wants us to be together." They walked on to the next exhibit.

"Forget the universe," he said and turned her to face him in front of the mouse deer enclosure. The little animals had clustered into a wary pint-sized herd at the far end. "What do *you* want?"

"I want — " Sadee, the dog, dashed by again in her mind, equally alive and dead. Carina and her wildly colored hair wavered in and out of existence. Melinda and Carl bought a new condo and simultaneously filed for divorce. She struggled to focus. "I want — only to see the beauty in the world, the good things, whatever will make us happiest."

"Then we'll have to chart our course carefully," he said. "Keep our eyes on the prize and all that." He tucked a lock of her flyaway hair behind her ear.

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Then he faded, and balding Insurance-Barry stood before her. As always, the corners of *his* mouth turned down.

She pushed them up with her fingers, squinting hard, picturing the headful of silver hair with all her might. "I have a puppy," she said desperately, "*Sadee's* puppy, conceived on the day I found her. She didn't run in front of a car. She lived!"

That other terrible scenario, the one with the bloody carcass, faded until it was only a faint shadow, the echo of something tragic that might have happened, but, in the end, had not.

The night rippled, then his silver hair again gleamed in the moonlight. He seemed astonishingly, heartbreakingly, real. "I'm almost as good as a puppy," he said helpfully, eyebrows quirked in that familiar appealing way.

"Almost." The breath caught in her chest. Her arms stole around his neck, and she leaned in so close, she felt his heart beating under her cheek.

"*And* I'm already housebroken," he said into her hair. "Let's not forget that."

The multitude of other possible Barrys pressed in, as though she were surrounded by a crowd of insistent ghosts. *I will not see you!* she told them. *You all belong somewhere else! Go away!*

One by one, then, they faded like smoke on the wind. This Barry felt suddenly anchored, as though he were here to stay. Let those other Allys, who were undoubtedly all skinnier, younger, funnier, smarter, and more sophisticated, pursue their own versions of Barry, she thought.

She tilted her head back and gazed up at the glittering, cut-glass stars, holding on with all her might. This one, universe, was hers.

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FILMS

KATHI MAIO

WAITING ON A SHIP CALLED TOMORROW

NO MATTER what their literary orientation, fiction writers of all stripes often turn their hands to Science Fiction at least once. Sometimes they are just "slumming" in popular formulas. (A disastrous proposition, that, since it disrespects not only their potential audience, but even their own work.) Sometimes the themes they want to explore are just better suited to the speculative realm. And sometimes they have a hankering to send a wake-up call by relating a cautionary tale of the near or distant future.

When Margaret Atwood, the well-known poet and "literary" novelist of Canada, published *The Handmaid's Tale* in 1985, it was quite obviously a fictional warning. (And her novel about a fundamentalist Christian totalitarian state being established in the U.S. seems even more timely now than it was twenty years ago.) At a time when toxic contamination has left much of the (white, elite) population sterile, women capable of reproduction are labeled "handmaids" and are relegated to breeding servitude in the households of the owning class.

Atwood's narrative, as told in the voice of a handmaid called Offred, is compelling, and her message clear. Sadly, when it came time to try to translate her story to the screen, much of the power of the novel was lost. The 1990 film, directed by Volker Schlöndorff, is earnest enough, but oddly uninvolving, despite a screenplay by Harold Pinter and performances by the likes of Natasha Richardson, Robert Duvall, and Faye Dunaway.

The opposite is the case with mystery novelist P. D. James's

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experiment in the speculative, *The Children of Men* (1993). James (aka Baroness James of Holland Park) is renowned as a detective novelist — and rightly so. But she seems quite ill at ease dabbling in a science fiction plot. Like Atwood's earlier novel, the themes of *The Children of Men* involve widespread infertility, totalitarian regimes, and class/cultural domination. But James's viewpoint about these issues is harder to fathom.

The year is 2021. When a religious (Christian) and political dissident named Julian is the first woman to become pregnant after more than twenty years of global infertility, it is up to an emotionally withdrawn Oxford don named Theo Faron, who just happens to be the cousin of Britain's semi-benign dictator, the Warden of England, to protect her.

The voice of James's novel is strangely outdated. Phrases like "crenellated heart" and "lugubrious cook" appear on the same page. Unbelievable for 2021, perhaps. (Looking forward now, I suspect that the move toward abbreviated text-messaging lingo will be so complete in fifteen years that no "word" over six letters long will even exist.) Still, since the novel's hero is a fifty-year-old scholar of Victorian history and literature, the language he uses seems odd yet appropriate.

James has other touches in her narrative that seem creepily right, too. The genteel childless developing an unhealthy fascination for artificial doll babies and household pets is one example. Broken porcelain dolls are buried in consecrated ground, and bonneted kittens must endure christenings. And then there is the Quietus, a ceremony of mass suicide — or is it murder? — designed for sickly elderly that an aging population can no longer support.

Despite the many evocative plot bits and narrative touches, *The Children of Men*, never really comes together as a novel, however. Part of the problem is that the characters never interact in ways that seem credible — so that by the time a blatantly away-in-the-manger birth occurs, with Theo and Julian murmuring "Oh, my darling" at one another, it is hard not to guffaw.

One wonders, too, whether James doesn't have an unconscious admiration for some of the very things (like an anti-immigrant uber-Thatcherite dictatorial government) that she seems to be criticizing. Certainly, an almost fundamentalist Church of England religiosity seems to be cited as the cure for

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infertility as well as general futuristic malaise.

In the end, *The Children of Men*, as a novel, fails to satisfy. And with the almost certain decreasing returns audiences of Science Fiction endure when a novel or story is adapted to the screen, how could one expect anything but disaster from a cinematic retelling of James's novel? Well, they say keep your expectations low and you won't be disappointed. But in this case, you could set your expectations as high as you like, and you will likely still be underestimating the movie of *The Children of Men*.

Point one (two and three) in its favor is that the film of *The Children of Men* is directed by the exceedingly gifted Mexican filmmaker, Alfonso Cuarón. Among the art house set, Cuarón is previously best known for his road movie, *Y Tu Mamá También* (2001), while sf fans will remember Cuarón as the helmer behind the best of the Harry Potter films, *Harry Potter and the Prisoner of Azkaban* (2004). And I personally became a fan when I experienced the magic realism of his adaptation of the Frances Hodgson Burnett kiddie-classic *A Little Princess* in 1995.

Clearly, this is a filmmaker capable of turning his talents to just about any text or genre. And he was a brilliant choice to bring a little hard-nosed hopefulness and breathtaking action to P. D. James's dreary and pious novel.

When Cuarón took on the project, the first thing he did was toss the half dozen or so screenplays that had been written since the James novel was optioned. With HBO telepic veteran Timothy J. Sexton, Cuarón then fashioned (with additional writing credits going to David Arata, Mark Fergus, and Hawk Ostby) a screenplay that launched from the basic locale and plot root of the James novel. That is, humans have been incapable of reproduction for almost twenty years, and this loss of a societal future has only exacerbated global devolvement into chaos and racial/class conflict, even in Jolly Olde England. But then Cuarón and Sexton take that story in a much different and totally riveting direction.

In Cuarón's London, which proclaims itself the last outpost of civilization, it is 2027 (six years later than James's date). Our antihero, Theo Faron (Clive Owen), is a soul-dead bureaucrat living in a garbage-strewn city where thugs attack commuter trains, immigrants of all nationalities and types are rounded up and shipped to

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detention camps at will, and coffee shops are bombed on a regular basis. The world is gray and hopeless. However, the rich, as always, reap what spoils exist — whether it is saving priceless artworks for their personal enjoyment, or parading exotic (and I mean *really* exotic) pets through the last green parks.

For most people, there is no art that hasn't been graffitied over, and only the bleakest future. Pandemics and strife deplete the remaining population. The last baby born on earth, a young man of eighteen from Buenos Aires, has just been murdered in a brawl outside a bar. That death has only deepened the collective despair. Is it any wonder then that the oft-advertised suicide kit, Quietus, is a bestseller?

Once upon a time, Theo would have agitated for social justice in the remaining days. Now, he just comforts himself with booze and cigarettes, until an old lover, Julian (Julianne Moore) has him kidnapped for a chat. A revolutionary leading a pro-immigrant group called the Fishes, Julian challenges Theo to get transit papers from his cousin (Danny Huston), the Minister of Arts, to help the group transport a woman to the coast.

Theo is reluctantly willing to call in the familial favor for money. But he becomes drawn into the plot on a very personal level only when both government forces and traitorous revolutionaries express their intention to kill him.

Guess our hero wants to live, after all. Especially when he meets the young woman needing transport. She is a young black woman named Kee (Clare-Hope Ashitey) who is large with child. Unsure who the father is, this new Eve is certain of one thing: She wants to give her baby a fighting chance at a future. To do this, she hopes to rendezvous with a ship called *Tomorrow*, sent to the coast of Britain to meet her by The Human Project, a group of great scientists and philosophers who still work to save humanity.

Is The Human Project real, or simply a myth suitable only as a punch line to bad jokes? Theo isn't sure. But Kee herself is a miracle he wouldn't have believed, so he devotes himself to getting her where she needs to go.

Kee and Theo's hegira is a harrowing journey, to be sure. And director Cuarón makes sure his audience is completely immersed in the action and the violence. To this end, he worked with long-time cinematographer Emmanuel Lubezki, and a very hardworking handheld

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camera operator named George Richmond, to shoot much of the movie in amazingly intricate wide-lens extended shots that go on forever through bombardments and gunfire, leaving the audience (as well, no doubt, as the actors) breathless and exhausted.

This is what an "adventure" movie is supposed to do, folks. Not just assault your senses with sights and sounds, but actually pull you into the plot on the most visceral level possible. This is action that is more than a spectacle. It is an emotional experience. And I truly cannot remember a film that has ever done it so well.

The Children of Men is a wild ride of a very serious movie. Because of the pace, some of the motivations and subplots are never explicated in the clearest way possible. But since we are experiencing the plot pretty much in real time with Theo, the sometimes confusing story shorthanding wasn't just forgivable. It was actually right.

Cuarón's 2027 is, of course, a commentary on society today: on the willing suspension of civil liberty in the face of terror; on our growing distrust of the "other"; on the poisoning of our planet to the point where it can no longer sustain us and our children. All pretty bleak stuff. But somehow, amidst all the decay and violence, Cuarón never really abandons hope. And he encourages us to feel the same.

The character of Theo is essential to this transformative journey from comfortable despair to courageous struggle. Fortunately, Clive Owen is up to the task. The supporting cast also does fine work, including Michael Caine, as (once again) the most likable character in the movie — an aged hippie pot farmer named Jasper, who has a good heart and a talent for farting on cue. Caine provides much of the comic relief in the film, but the movie includes many other surprisingly funny moments, like the frightening scene in which Theo tries to make his getaway in a car that won't start, pushing it through a muddy, rutted farm path, with murderous thugs in hot pursuit. The scene is both heart-pounding and hilarious.

Dear Reader, what can I say? You do not want to miss this movie. If at all possible, see it in a movie house, on a large screen, with surround-sound. The photography is desolate but gorgeous, and the action is as exciting as you are ever likely to witness. Experiencing it in all its big, full-frame glory is definitely the way to go. Still, if

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you have no opportunity to see *The Children of Men* in a theater, do not despair. (Alfonso Cuarón is, after all, the enemy of hopeless negativity). This is one movie that will have a lasting impact even if you are forced to watch it on a ten-inch black and white Zenith.

SPECULATIONS
WE WILL MAKE ENVIRONMENTAL DISASTERS GO AWAY BY RE-CHARACTERIZING THEM AS "EVOLUTIONARY OPPORTUNITIES"
hongoo
WE'LL JUST LET "NATURE TAKE ITS COURSE."

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In Don Webb's new story collection, When They Came, *Bruce Sterling is quoted as saying, "Don Webb is a genius. He's not widely appreciated. There are some things mankind was not meant to know." Perhaps humanity was not meant to know the things alluded to in this new story. Or maybe it's more frightening if we* were *meant to know these things....*

The Great White Bed

By Don Webb

I WANTED TO WRITE ABOUT the bed because I thought it would be therapeutic. For pretty obvious reasons I never got over that summer, and I know there's a mental part to go along with the physical part. I don't write about the book. And see, I'm already there. I can't make myself think about what I need to think about. The room. The bedroom. I can start with that. It smelled of geraniums. My grandmother had loved them and it had become my job to keep them alive after she died. She grew them in coffee cans, and when they got too root-bound she would put them in plastic buckets that she got working at the cleaners. Clay pots were an extravagance. There were five of the big light blue buckets on a special shelf built across the windows in the bedroom, so the bedroom always had a green smell.

It was hot too. There were two swamp coolers that cooled the house down. One in the living room at the front of the house, one in the den in the back. Neither supplied much cool air to the place where I slept. I remember the first thing that Grandpa had asked when I moved in with him that summer was if I wanted to sleep with him. I thought that was

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creepy and I said I'd sleep in the guest bedroom, where Granny did her sewing. It was so hot that I never turned down the big white thick bedspread on the bed and lay on the sheets. I just lay on top of it. I didn't want anything over my body. At home I slept on a twin bed; the king size bed seemed the biggest thing in the world to me.

I was thirteen. Next year would be junior high.

I helped Grandpa out. I cooked his meals, did his laundry, cut the grass. In retrospect it was a big job for someone my age, but I came from a family of workers. I didn't do a good job with the laundry and my food repertoire relied heavily on Spam baked in the oven covered with ketchup.

My friends were rich kids, mainly in camp or hanging out at the private swimming pool. These days I know they weren't rich, but they seemed rich to me. I amused myself with TV, watching old black and white comedies in syndication. I remember that summer had a good dose of *The Dick Van Dyke Show* mixed up with the strangeness. Cable TV was new to Doublesign that year. We got twenty-eight stations. Grandpa would get up early and wake me up. He had been a farmer, before they moved to town. Kids are not supposed to see the dawn in summer, no matter what anyone says. He liked cereal for breakfast. He really liked one called Team, I don't think they make it anymore. He would make coffee and I would pour the cereal. Afterward he would go off to read the paper and I would do the dishes. If I had any yard work to do I would do it in the mornings before it got too hot. I trimmed the hedge, cut the grass, weeded out the dandelions. Early on I had tried to keep a little garden going. I had planted some tomatoes and cucumbers. But one day Grandpa weeded them all out of the bed where I had planted them. His mind was going, but no one in the family would say so. When I tried to stop him he hit me with his cane and said I was stupid. Like I say, even without the weirdness, it was a big job.

Noon would come around and Mom would join us for lunch, which I had made. She worked downtown, a mysterious place full of much activity. She would eat my ketchup-covered Spam and canned green beans and visit with her dad. Sometimes he would ask her things like "How come I haven't seen you in a month?" even though she came every day. In the afternoons he would forget that we had eaten lunch and ask me when the hell I was going to fix it. He took a nap about three, and I know this

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will sound strange, but I started napping too. Summer was long and boring and it was easy to doze off. I would lay down in the green smell on the huge white bed and snooze.

School had been out about three weeks, when I woke one day to seeing Grandpa reading the book. I always took shorter naps than him so I was startled he was up. I went in the living room. He sat in his rocking chair and even though the light streaming in through the picture window lighted the room, he had Grandmother's prize lamp turned on. I loved that lamp. It had two globes, one above and one below. Someone had painted a rose on each globe. I wonder who has it now.

The book was small and thick — about the size of a Stephen King paperback. It was bound in gold-colored leather, and had a green nine-angled design on its cover. I don't want to say more about it. I didn't mean to say that much.

Grandpa was totally absorbed, his lips moving slowly. I had only seen him with a few *Reader's Digest*s over the years. His concentration had been slipping so much since Granny died I didn't know how he could be reading. I guessed he probably wasn't. Just distracting himself. I was always in favor of his distractions. He didn't get mad at me and I didn't have to think up things to talk about. It was a lot easier cutting his lawn than coming up with discussion topics.

I made macaroni and cheese plus canned yams for dinner. I didn't disturb him until I had food on his plate. He came in, we said our prayers, and afterward we watched the six o'clock news. We watched TV together every night. He would fall asleep about eight. I would get him up and tell him to undress about ten.

The next day I had a pleasant surprise. Sunlight woke me, not Grandpa. I got up, pulled on my clothes, and found him reading again.

"Hey, you ready for breakfast?" I asked.

"You bet," he said.

His eyes had the shine they used to have when I was a little kid. He got up out of his chair and told me, "You know, I think you're old enough to have coffee now."

He put a great deal of sugar and milk in my coffee. I loved it and I still do. We ate our cereal in our usual crunchy silence, until curiosity got the better of me.

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"What's that book you're reading?"

He looked at me as though I had said something very strange, like, "Are we going to the moon this afternoon?" He said, "I'm not reading anything."

"Not now. I meant just before breakfast."

"I wasn't reading anything."

The light went out of his eyes just as though someone had hit the switch.

I did the dishes and went off to watch *I Married Joan*. The TV was in the den. After laughing at Joan Davis's antics for a quarter of an hour or so, I went to the front of the house and spied on Grandpa. He was reading. He seemed about halfway through the book. I cleared my throat. He didn't look up. "I'm going down to the park," I said. He didn't look up. I went back to watching TV. Maybe his senility had entered a new peaceful stage.

When Mom came that day, Grandpa was talkative and cheerful. He told Mom what a great job I did with the lawn, how much he liked my food, his opinion of the Mayor and otherwise talked like an adult human being. I didn't know what had happened, but I thought it was the greatest thing ever!

Mom gave me some money so that I could walk down to the Ice Palace and buy cones for Grandpa and myself later that day. I knew she was happy. She had been through so much grief watching her dad rot, and she thought that maybe, just maybe this time, God had listened to our prayers. I thought it was my cooking. Okay, I really didn't think that. I thought it was the book.

It was on the walk down to the Ice Palace that greed filled my soul. What if really and truly the book was making Grandpa well again? If it could fix up his tore-up mind, what might it do for mine? I mean, my mind was good; I made A's in math and English, and I could always outsmart people in game shows. I would get the book. Not take it from Grandpa, because I didn't want to stop his miracle, but read sometime when he was asleep and get my own benefit. I would begin junior high as a genius!

The first logical time would be afternoon nap. I watched the old Seth Thomas clock on the living room mantel with X-ray eyes. Grandpa read. It became three.

"Don't you want to take your nap?" I asked.

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I had to repeat myself a couple of times before he looked up.

"I'm giving up naps in the afternoon," he said. "I think I've slept enough in my long life. But I bet you sure are sleepy."

The moment he said it, all I could think of was sleep. The great white bed filled my mind. Big and solid and soft. It seemed huge and inviting. The bed was in my head and I needed to be in the bed. I started to speak, but I just yawned. I got control of myself and said, "A nap does sound good."

I went to the bedroom and lay atop the thick white bedspread. Usually I had to lie still for a long while, staring at the round glass light fixture that Granny had put in. I would watch the center brass nut and focus on it while my thoughts drained away into the milky white glass around it. But today sleep came the moment I lay on the pillow. I slept until Grandpa woke me.

"Get up," he said. "I've made supper."

I couldn't figure out what had happened. My brain was all logy. I drifted into the kitchen, where the small brown dining table was. He had made dinner. Fish sticks and lima beans. He had poured milk for both of us. We prayed and ate.

"I thought it would be nice to make dinner for you. You're always making it for me."

"This is nice," I said. I hated lima beans. Still do.

"I've been thinking a lot about exchange lately. Too many things only go one way. You know what I mean?"

"I don't follow."

"Well it's like this. You do all this work for me and I don't do anything for you. That's supposed to be fair because I brought up your mother and her brothers. I bet that doesn't seem right sometimes, does it?"

I thought about being hit by the cane. I thought about not answering. But maybe this really was the time God was answering prayers.

"No sir, sometimes that does not seem fair."

"Or books. Do you ever think about books, Billy? We spend our whole lives reading them, but they never get a chance to read us. Would you like that, Billy, if a book read you sometime?"

"I don't know. I mean, I don't know what it would be like."

"Well you've heard the expression, 'He can read a man's character.' Haven't you?"

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"Yes, but I don't really know what it means."

"Well, Billy, being read by a book is about the finest experience there is. Not everyone has it when they grow up, but maybe you will."

God wasn't answering prayers. He was crazy, but in a new way. I cleaned the table after dinner and we went to watch *The Carol Burnett Show*.

Sleep hit me hard again that night. I woke up to sounds from the living room. I don't know how long Grandpa had been talking. He was arguing. I couldn't make out the words, but it scared me. I didn't know what I was supposed to do if Grandpa went crazy by himself in the middle of the night. Finally I heard one statement clearly:

"No, I won't do it. It's not a fair exchange."

I got out of bed. I was wearing just my underwear, so I got dressed. I didn't want to confront Grandpa partially dressed. As I put my clothes on I heard him get up out of his rocker and make his way toward his bedroom. I lay back down on the bed. Even though Grandpa was pretty deaf, I didn't even dare breathe.

I would have bet a million bucks that I was not going to go back to sleep that night, but sure enough sleep hit me like a ton of bricks.

I felt the bed below me melt. I was sinking into half-melted vanilla ice cream, although it wasn't cold. As it passed my eyes, the scene lit up with a terrible whiteness. There was nothing but white, a great white blindness, a great white dark. I could feel myself pulled lower and lower. I couldn't struggle, couldn't swim. For a moment I wished I were one of my rich friends who was hanging out at the pool this summer. They would know what to do. They didn't have to take care of their goddamn grandfathers. The down-drift took forever, and it gave me time for a lot of thoughts and none of them were very good. Maybe I was in a children's story where bad thoughts made you sink.

Then suddenly it stopped. Although the non-landscape hadn't changed and all I could see was the thick whiteness, I felt something looking at me. Something big. I tried to analyze what it felt like. I mean, I had watched *Star Trek* and *Night Gallery*. But I couldn't get any feelings for old or young, human or alien, alive or undead. All of those charts were two-dimensional schoolbook ideas and this was floating above the white page of the book about nine inches. I felt it wasn't going to get bored staring at

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me, and that scared me. It could look at me forever and not blink. For a brief while I wanted to see it, but then I was glad I couldn't.

Slowly I felt something congeal under me. I wasn't floating anymore. Then a tiny speck formed a few feet above my head. It turned out to be the brass nut in the center of the light fixture. I was staring at the white glass of the fixture. The sun was up. I could hear Grandpa making coffee. The bed was dank with sweat. My nightmare had soaked the thick bedspread. I was already dressed, so I went on into the kitchen.

"Good morning," I said to Grandpa.

He just looked at me with hatred. The light and life had gone out of his eyes. We didn't talk during breakfast. I mowed the lawn afterward even though it didn't need it. I just didn't want to be around him. I don't know if he read his book. Or if the book read him.

Lunch was worse. He was still not talking, and Mom was so upset to see him regress she actually broke down in tears. After lunch she went out to her car and just sat in it and cried.

I went out to comfort her. I was thirteen and it was the manly thing to do. She rolled down her window to talk to me.

"Mom, are you okay?" I asked. I know it was a dumb question.

"What happened, Billy? Did you do something to him?"

I couldn't believe her response. I knew she was upset, but I wasn't some kind of miracle worker, some kind of jinni that could make Grandpa better or worse by blinking my eyes. I got really mad, so I turned away from her car and began running to the park. I knew she was late to work and didn't have time to follow me. She managed an office and everything depended on her. There were some cedar bushes in the park, about six feet tall. Underneath the green, make-out artists had hallowed and hollowed a space over the years. I dove into the cool dry dark to cry. I knew no one would be making out at twelve-thirty in the heat of the summer. I cried a long time. I messed up my clothes. Great — now I had laundry to do as well as the additional job of hating my mom and feeling guilty. I didn't give a damn about Grandpa at this moment.

I headed back to his house. This was going to end today. I would tell my mom and my uncle that I couldn't do this anymore. That I wanted some regular summer job like sweeping out a barber shop, which my friend Jerry had. I was going to tell things I had never told before, like the

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cane. I didn't think I would tell them about the book. That was probably Grandpa's craziness.

Sure enough, when I got back to his little brick house he was reading his book. He was almost to the end. I had been gone for nearly two hours. I hadn't cried that much since my grandmother died two years ago. I thought crying was supposed to purge you, make you feel better, but I felt all raw and sticky like parts of my soul had been through a blender and were hanging outside of my body. I didn't talk to the old man. I just went to bed.

To my initial relief the same magic that had brought sleep the last two times worked again. I was out like a light.

However, the world changed from a fabulous formless darkness to a great white thickness. I knew I was sinking into the world of the great white bed. The down-drift made me sick this time like a too-long downward ride in an elevator. Of course in those days growing up in Doublesign I had never even seen an elevator, but you can't enter a memory without carrying later memories in with you. Down, down, down.

It was an abrupt and unpleasant stop. I could hear my Grandpa saying something. It was a precise but muffled voice. The kind of voice you use giving a phone number. I began moving sideways. Slowly at first and then at a pretty good clip. Then the movement stopped again and I was lying next to someone.

I could move my head a little. It was Granny. She was dead and very, very white. I knew the great Whatever had been watching her for a couple of years, and had never got bored.

Then I felt the little knives.

Something was slicing through my feet. I couldn't raise my head enough to see it, but I could hear it and of course it hurt like hell. About an inch was being cut off. I didn't think I could stand it. Why didn't I wake up? Why didn't I black out?

Then after that section had been cut clean another cut started about an inch higher. I figured loss of blood or shock would get me. I kept telling myself it was just a nightmare, but that doesn't really help with that much pain.

Then another cut.

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Then another.

And so slowly forth until my knees had been reached. All I was at this point was tears and pain.

Then a dark rope dropped down from above. I can't tell you what a relief it was to see something black in that great white space. It hit my face, snaking over my eyes and mouth, finally it touched my ears.

"Billy. Billy can you hear me?"

It was my uncle's voice. I woke up on the great white bed and then passed out from blood loss.

The rest of the summer and the fall and the winter and spring were physical therapy.

I had lost both of my legs up to my knees. This is not a euphemism. There was nothing there. There were no traces of my feet and lower legs anywhere in Grandpa's house.

But there were a set of feet and lower legs on his bed in his room. They were cold and embalmed and a couple of years old. They belonged to my grandmother.

I didn't find that out until just before my mother's death last year. It had been decided not to tell me everything, as though knowledge could make it any worse. There was no trace that my grandmother's grave had been disturbed in any way. They had dug up her coffin and put the legs in, burying it as well as any gossip with her. They put Grandpa in a mental ward afterward. Mom never went to see him again as long as he lived, but that turned out to be only three months anyway. When Mom got cancer she decided to tell me everything.

My uncle had dropped by that day because Mom had called him. She felt bad about what she had said to me. She couldn't leave her office, but her brother got off early. Mom told me that she felt guilty about what had happened to me every day of her life.

I live in a special home for people with mental and physical disabilities. When she was alive, Mom would come see me every day at noon. We always ate together just like she used to eat with her father. About two months before she died she got too sick to come, but they took me to see her in the hospital a couple of times, that was when she told about Granny's legs and so on.

I read and watch TV a lot. It hasn't gotten better in the last forty years,

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I can tell you that. I am kept here because I can't give an explanation of what happened to me that makes sense to anyone. I didn't get to finish school and I regret that. So I hobble around on my two fake legs. I even keep a little garden. Just flowers, no tomatoes this time. I never learned that Internet thing either; they don't like us looking things up. The only thing that some people would find odd about me is that I won't sleep on white sheets or have a white blanket or a white bedspread.

Mom told me that she searched every inch of Grandpa's house for the book. She told me that she never believed my story fully, but knew it had to have some truth. She didn't find the book. Maybe Grandpa found it at the park or bought it in a garage sale. I tried researching occult matters once, but the people running the home thought it was a bad idea for me. One time I had a dream, about ten years ago, of Grandpa lifting the thick white bedspread and looking under the bed for something and just finding the book. That still doesn't answer the question of where it came from.

Sometimes in my dreams I smell geraniums and find myself in the great white space. I can't scream in my dreams and I've never woken up my roommate with any odd sounds. I don't tell my doctor about it, as it seems to upset her. But the dreams are rare. I think they're really not dreams at all, I think it's just how things are. I think the great Whatever is always watching us.

And It's never bored.

—For Basil Copper

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SCIENCE

PAT MURPHY & PAUL DOHERTY

THINK SMALL

BACK IN THE 1970s, Arthur C. Clarke stated three "laws" of prediction in his book, *Profiles of the Future*. Of the three, the best known is the third: Any sufficiently advanced technology is indistinguishable from magic.

That third law relates to a topic that we've been studying lately. For a project at the Exploratorium, we have been learning about nanoscience, a field that explores materials at the atomic scale, and nanotechnology, which involves the ability to measure and manipulate individual atoms and molecules. Sometimes the claims made for nanotechnology seem to border on the magical. So we've been trying to separate the reality from the hype.

But before we get started, we'll mention something that we *won't* talk about. Many newspaper articles about nanotechnology seem obsessed with the idea of nanobots, itty bitty robots that dash about doing useful tasks and maybe (just maybe) getting out of control and destroying the world by turning it all into gray goo. Paul finds those robots implausible, noting that programming such nanobots to reproduce themselves is far beyond our current abilities. Pat finds discussion of these nanobots tedious, except perhaps in a fictional context.

If you want to understand why we're not talking about those nanobots, we suggest you read the debate between Eric Drexler and Richard E. Smalley, conducted in the pages of *Chemical and Engineering News (http://pubs.acs.org/cen/coverstory/8148/8148counterpoint.html)*. Eric Drexler, the engineer who popularized the potential of nanotechnology and wrote about the dangers of self-replicating molecular machines in his 1986 book *Engines of Creation: The Coming Era of Nanotechnology*, defends the

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possibility of gray goo. Richard Smalley, professor of chemistry, physics, and astronomy at Rice University, who won the 1996 Nobel Prize in Chemistry for the discovery of fullerenes, has no truck with such stuff and doesn't mince words when he explains why. We think Smalley got the better end of the debate, and don't see the need to hash it over again.

Nanobots aside, we'll talk about what nanotechnology is, why it's interesting, and where its effects can be observed in nature. We'll tell you about some of the products of nanotechnology that are already on the market, and we'll consider the potential impact of this new technology.

Think Small

To understand nanotechnology, you have to think small. Nanotechnology and nanoscience involve unimaginably tiny objects, which are measured in a ridiculously small unit of measurement: the nanometer. A nanometer is *one-billionth* of a meter. That's the American billionth, a thousandth of a millionth. (Here Paul jumps in and inserts scientific notation, explaining that a billionth can be written as 10^{-9} m.)

Here are a few facts that may help you imagine a nanometer:

- If a marble were a nanometer across, then the Earth would measure a meter from pole to pole.
- A human hair is 50,000 nanometers in diameter.
- Five carbon atoms in a row fill a distance of one nanometer.

Are you having trouble imagining a nanometer? If you are, don't feel bad. You aren't alone.

In the course of her work at the Exploratorium, Pat interviewed Don Eigler, a physicist who specializes in studying the physics of surfaces and a nanotechnology pioneer. Having spent some time being frustrated by analogies like the ones included above, Pat was pleased when Eigler admitted that all these analogies and comparisons really didn't help him imagine the nanoscale world. "I can't imagine what a hundred million of anything in a row is like," he said. "It's just too big."

A billion is ten times bigger than a hundred million. So if imagining one hundred million is tough, imagining a billion of anything is even tougher. A billion is approximately three times the population of the United States. It's the

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approximate number of letters in 6000 books of 500 pages each. A billion seconds is about thirty-two years. A billion is the number of dollars the U. S. government spent on research and development related to nanotechnology in 2005.

A billion is a very big number. And a nanometer is a meter, divided into a billion parts. Can you imagine that? We can't.

Many discussions of nanotechnology seem to get stuck at this point. Some educators seem to be obsessed with helping people imagine this unimaginably small fraction of a meter.

We're not like that. We say, "So you can't imagine it? Get over it. Move on."

Size is the defining feature of the nanoscale world, but size isn't what makes this world so interesting to researchers. So let's get to the interesting stuff.

Small is Different

Nanotechnology generally deals with objects with dimensions of between one and one hundred nanometers. One reason these tiny objects are interesting is they obey a different set of rules than the ones you and I are used to. We live at a size scale where certain physical laws apply — the laws of classical mechanics observed by Isaac Newton in the seventeenth century.

There are two major reasons that working at the nanoscale is different from working at the macro scale of everyday objects: 1) quantum mechanics and 2) the increase in the ratio of the surface area to the volume of a particle. Because of these two factors, a few atoms together in a nanoparticle just don't behave the same way they do when there are trillions of atoms together.

Let's start with the issue of quantum mechanics — the modern physical theory that deals with the structure and behavior of subatomic particles. One of the tools used in nanotechnology is the scanning tunneling microscope. The word tunneling here is not about boring holes in mountains. Rather, it is about a quantum mechanical effect in which particles (electrons) disappear from one place and reappear at another without passing through the space in between. That's something you don't see every day. (Well, except with cats — but that's another story.) Quantum mechanical effects become noticeable at very short distances, and they usually vanish when we deal with everyday objects. So quantum mechanics is

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important at the small distances of the nanoscale.

The change in surface area with particle size is easy to understand. Take a two-by-four and break it down into sawdust. Measure the surface area of each of those little bits of sawdust and add them all together. The resulting surface area will be much greater than the surface of the original two-by-four. Chemical reactions often occur at surfaces. A cloud of wood dust in air can explode, while a two-by-four usually does not.

Atoms at the surface of a material behave differently from atoms inside a volume of material. Inside, the atoms are completely surrounded by other atoms; outside, they are not. Water molecules at the surface of a piece of ice, for example, behave more like water molecules in a liquid than they do like water molecules in their solid, frozen form. It's that different behavior of water molecules at the surface that allows ice-skating to happen.

The amount of surface area at the nanoscale becomes huge compared to the surface area of everyday objects. In a nanoparticle (a chunk of matter less than one hundred nanometers across), almost all of the atoms or molecules in a substance will be near the surface. That changes the way those atoms or molecules behave.

Suppose you have a fist-sized lump of gold. The number of atoms at the surface of the lump is small compared to the total number of atoms in the lump. But if you broke that lump of gold down into gold nanoparticles, the ratio of surface to volume changes. In a cluster of 100 atoms, more than half the atoms are on the surface. If you have a cube with five atoms on a side, then you have a total of 125 atoms — and 98 of them are on the surface! The properties of a nanoparticle are really governed by surface effects.

How does that change the way that gold behaves? When it's a fist-sized chunk of gold, it looks gold in color and it melts at around 1948 degrees Fahrenheit (1064 degrees Celsius).

Compare that to particles of gold that are between one and one hundred nanometers across. These particles melt when heated to just a few hundred degrees Fahrenheit, a change that probably relates to the increase in the atoms near the surface.

These particles no longer look gold in color. They can look red, blue, or a variety of other colors,

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depending on the particles' sizes and distance from each other. That, we think, is a quantum mechanical effect related to the behavior of electrons in the gold.

The electrons that make gold a metallic conductor are free to move from gold atom to gold atom. However when there are clusters of just a few gold atoms, quantum mechanics restricts these electrons to specific energy levels. That means the particles can absorb certain colors and give off light of other specific colors. They can turn white light into red, for example, by absorbing the blue-green light and scattering red light.

The ancient Romans knew how to color glass by adding gold. Initially the glass is colorless, but it becomes ruby-red when heated in a controlled fashion. The Romans knew how to make the glass turn red, but they didn't know that the color came from nanoparticles of gold.

Butterfly Wings and Gecko Toes

A close examination of the natural world reveals other examples of how the nanoscale world affects what we see or experience at the human scale. Take, for example, the blue morpho butterfly. This butterfly's wings are a beautiful, shimmering blue, a color so bright that naturalists have reported seeing the flash of blue wings from a quarter of a mile away. You might think that such a vibrant color comes from blue pigment — but there is no blue pigment in the butterfly's wings. In fact, microscopic studies have shown that the butterfly's wing is covered with tightly packed rows of clear scales. No color at all!

These clear scales form layers that reflect blue light. Each layer is 62 nanometers thick and the layers are 207 nanometers apart. This spacing is exactly what's needed to reflect that shimmering blue light. Spacing of other distances would reflect light of other colors. The interaction of light with these nanoscale structures creates the brilliant blue color of the butterfly's wings.

Another natural example of how very small structures have very big effects can be found on the feet of geckos, lizards noted for their ability to run across walls and ceilings, sticking effortlessly to the slickest surface. On the bottom of each gecko foot are half a million microscopic hairs, each about one tenth the diameter of a human hair.

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The end of each hair splits into hundreds of even tinier hairs, measuring just 200 nanometers across. When a gecko presses its foot down, these tiny hairs unfurl, pressing very closely against the surface.

When molecules are brought very close together, they are weakly attracted to each other. We don't usually notice this attraction, known as van der Waals forces. (For those who must know, van der Waals forces occur when an unequal distribution of the electrons in one atom creates an area of positive charge and an area of negative charge, known as an electric dipole. The dipole affects a neighboring atom: the positively charged area attracts the neighbor's negatively charged electrons, creating an electric dipole in the neighboring atom. The positive charge attracts the negative charge and the two stick together.)

Van der Waals forces operate at the nanoscale. These forces, multiplied by the millions of hairs on the gecko's feet, hold the lizards to the ceiling quite securely.

The nanoscale characteristics of butterfly wings and gecko toes have inspired researchers to contemplate commercial products that make use of the same principles. Researchers at Manchester University's Centre for Mesoscience and Nanotechnology in the United Kingdom have developed what they call "gecko tape," a super-sticky reattachable dry adhesive that uses synthetic hairs that mimic those on the gecko's feet. Researchers at cosmetic manufacturer L'Oréal are working to produce cosmetics that reflect brilliantly colored light like the blue morpho butterfly's wings.

It's Happening Now

Gecko tape and blue morpho makeup aren't on the market just yet. Many reports on nanotechnology focus on future possibilities, describing how nanotechnology could change the world. Those are certainly interesting to contemplate. But we've decided it's more interesting to contemplate the ways that nanotechnology has already affected our lives.

Take, for example, the gas in your car. That gas was extracted from crude or unprocessed oil, the stuff that comes out of the ground — and nanotechnology has made a big difference to how much gasoline is extracted from every barrel of oil.

Crude oil is a mixture of hundreds of different hydrocarbons,

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compounds made of hydrogen and carbon. When crude oil is refined, large hydrocarbon molecules are broken into smaller ones in a process called *cracking*. How much gasoline can be extracted from a barrel of crude oil depends on the efficiency of the cracking process.

Back in 1962, researchers at Mobil dramatically increased the efficiency of the cracking process, upping the quantity of gasoline extracted from a barrel of oil by a whopping forty percent. They accomplished this revolutionary change in petroleum refining with a porous crystal called zeolite. Riddled with pore openings small enough to distinguish between molecules of different sizes and shapes, zeolite acts as a catalyst, an additive that accelerates and increases the efficiency of a chemical reaction. (Those zeolite crystals qualify as nanotechnology because the holes that riddle them are tiny — less than a nanometer across in some cases.) According to a 1992 National Academy of Sciences estimate, the shift to a zeolite catalyst saves the United States more than 400 million barrels per year of oil.

That change in 1962 didn't make the newspaper headlines. It was a change in an industrial process — not something to get worked up about. It wasn't called "nanotechnology" back then, but that's what it's called now.

Mobil's use of zeolite can be said to be one of the first broad-scale applications of nanotechnology. It's an example of what Mark and Daniel Ratner, authors of *Nanotechnology — A Gentle Introduction to the Next Big Idea*, call "stealth nanotechnology." That's nanotechnology that's hidden in other products, nanotechnology that we, as consumers, don't even notice, though it stealthily makes a difference in our lives.

Carbon Nanotubes and Hockey Sticks

The products of nanotechnology seem to inspire superlatives: super small, super sticky like gecko tape, or, in the case of carbon nanotubes, super strong.

Carbon has different forms, the best known of which are graphite, a soft substance made of layers of carbon, and diamond, a super-hard substance made by carbon atoms joined in a rigid crystal. In 1985, three scientists discovered the buckminsterfullerene molecule, also known as a buckyball or fullerene. This previously unknown form of carbon is an arrangement of

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sixty carbon atoms in a spherical structure that looks a lot like a geodesic dome.

Following the discovery of the fullerene, researchers worldwide were inspired to look for other forms of carbon. In 1991, Japanese scientist Sumio Iijima discovered the carbon nanotube.

Carbon nanotubes are ridiculously strong (much stronger than steel), light, and flexible. NASA is very interested in using them to create lighter and stronger spacecraft. Nanotubes have already been put to work in aircraft, lightweight bicycle frames, super-strong hockey sticks, and other sporting equipment. They may also be used to make car bodies stronger and lighter, contributing to fuel economy.

That's what's happening now. But the unique characteristics of carbon nanotubes have inspired much speculation about what could happen in the future. Maybe you've heard of the "space elevator." This theoretical device would replace the rockets that propel material into space. Instead, a permanent structure would lift material into orbit. Descriptions of this device usually involve a tremendously long and tremendously strong tether or cable that connects the Earth's surface with a point beyond geosynchronous orbit. Carbon nanotubes are the first thing that's come along that could be strong and light enough to serve as the cable in a space elevator.

Just as interesting as the strength of carbon nanotubes is their electrical conductivity. They may be the perfect material for making tiny electrical circuits, since electricity passes through them with very little resistance. In 2002, researchers succeeded in making nanotube transistors. At IBM, researchers used a single nanotube to create a working computer circuit. The nanotube became a voltage inverter, or NOT gate. The NOT gate, which flips an incoming bit of binary code from a zero to a one (or from a one to a zero), is one of the three fundamental types of logic gates on which all computers rely. Since each nanotube is basically one large molecule, the researchers essentially created a circuit using a single molecule. Paul reports seeing a wonderful picture of what looked like a thin clothesline draped across a city block of buildings. Except the picture had been made using an electron microscope; the buildings were the smallest transistors made so far on an integrated circuit chip, and the clothesline was a carbon nanotube!

Why does this matter? Well,

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maybe you've heard of Moore's Law. In 1965, Intel co-founder Gordon Moore predicted that computer processing power, or the number of transistors on an integrated chip, would double every eighteen months. This prediction became known as "Moore's Law," and so far, it's held true. In 1965, a single chip held thirty transistors. Six years later, Intel introduced its first chip, which held 2,000 transistors. Today's chips have over one hundred million transistors.

As chipmakers pack more chips into less space, we get faster computing and greater data storage. But there's a limit to how many transistors can be packed onto a silicon chip. Researchers are looking to carbon nanotubes to come in when the features on silicon chips just can't be made any smaller.

A Trojan Horse for Cancer Cells

Nanomedicine is another promising area of research. That makes sense, since life operates at the nanoscale. In all the cells of your body, tiny molecular machines are constantly working to keep you alive.

One promising area of research is the use of nanoparticles to destroy cancerous cells selectively, rather than killing healthy cells along with the cancerous ones. Many researchers are working on this problem, but our favorite example is the work of Dr. James R. Baker and a team of researchers at the University of Michigan.

Methotrexate, a powerful chemotherapeutic drug, can be toxic to both cancer cells and healthy cells. Baker and his team knew that all cells need the vitamin known as folate, or folic acid. They also knew cancer cells had a particularly voracious appetite for folate. Using a synthetic molecule called a dendrimer, researchers connected a molecule of folate to a molecule of methotrexate. The cancer cells grabbed the folate and yanked it inside. Along with the folate came the methotrexate, which poisoned the cell. The dendrimer, acting as a molecular trojan horse, fools the cell into admitting the source of its own destruction.

When tested with laboratory mice, this Trojan horse therapy was ten times more effective than the drug alone. This study, according to the University of Michigan, is the first in which a nanoparticle-targeted drug leaves the bloodstream, is concentrated in cancer cells, and has a biological effect on an animal's tumor.

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Research is underway to create other ways to combat cancer, to monitor blood chemistry and release drugs only when they are needed, and to develop artificial skin, artificial bone, and artificial cartilage that the body won't reject.

Now and the Future

It's tough to write an article about nanotechnology that doesn't come across as a laundry list of seemingly unrelated possibilities. We have super-strong tennis rackets and targeted cancer drugs; catalysts for petroleum refining and shimmery eye shadow. Products of nanotechnology that are currently on the market include stain-resistant pants made of nanotechnology-enhanced cotton, sunscreen containing nanoparticles of zinc oxide that block the most dangerous form of ultraviolet radiation, socks with embedded silver nanoparticles that kill bacteria and keep the socks from stinking, and water filters equipped with nanopores that filter out viruses. (To see a more complete list of products that make use of nanotechnologies, see the Project on Emerging Nanotechnologies' nanotechnology consumer products inventory at *http://www.nanotechproject.org/44*.) The varied products on this list have one thing in common: they have all emerged from a new way of examining and manipulating the world.

In considering these products, we are reminded of another set of laws — those formulated by technology historian Melvin Kranzberg. The first of Kranzberg's Laws is: Technology is neither good nor bad; nor is it neutral.

The nanoparticles of zinc oxide in sunscreen are good because they prevent skin damage from ultraviolet radiation. But that's not the end of the story. Nanoparticles don't act the same way as larger particles of the same compound. What happens when they encounter your skin cells? Do they present new health risks? People aren't sure about that and many feel that we must evaluate the possible health risks.

Each new technology, however mundane, opens up new possibilities. And the technologies that are emerging from the efforts of researchers working at the nanoscale open up possibilities that tax even the imagination of a science fiction writer (or so Pat says).

It's difficult to spot the beginning of a technological revolution. If you had been at London's Great

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International Exhibition in 1862, you might have seen some objects made of a moldable material called Parkesine, the first synthetic plastic. No one who saw those samples predicted the uses to which plastics would later be put. Creation of the first integrated circuit in 1958 set off developments in the electronics industry that led to the modern information revolution. But back in 1958, no one would have predicted the cell phone, the laptop computer, the Gameboy, and the many other electronic devices that dominate our lives.

Like these earlier technological changes, nanotechnology has the potential to spark revolutionary changes in how people live their lives. This article describes just a few of the applications of nanotechnology that are currently being explored in laboratories worldwide. Talk to researchers and for every application named here you'll get a hundred more. They won't all come to fruition, but even if one in a thousand does, the world will be a different place.

The Exploratorium is San Francisco's museum of science, art, and human perception — where science and science fiction meet. Pat Murphy and Paul Doherty both work there. To learn more about Pat Murphy's science fiction writing, visit her website at *www.brazenhussies.net/murphy*. For more on Paul Doherty's work and his latest adventures, visit *www.exo.net/~pauld*. For more about nanotechnology, check out the website that Pat and Paul were working on when they wrote this: *http://www.nisenet.org*

Plenty of Room at the Bottom

Back in 1959, Richard Feynman delivered a talk titled "There's Plenty of Room at the Bottom — An Invitation to Enter a New Field of Physics" *(http://www.zyvex.com/nanotech/feynman.html)*. Most people identify this speech to the American Physical Society as the first mention of some of the distinguishing concepts in nanotechnology. Feynman was a Nobel Prize winner, a bongo player, a troublemaker, and a genius. In this talk, he discussed the opportunities and promises of manipulating and controlling things on a very small scale.

The first step in any revolution is imagining a different world. That was the step that Feynman took. In the course of his lecture, Feynman predicted: "In the year 2000, when they look back at this

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age, they will wonder why it was not until the year 1960 that anybody began seriously to move in this direction."

But there's a simple reason people didn't immediately begin working at the nanoscale back then. They didn't have the tools.

The first tool they needed was something that let them observe and measure that nanoscale world. That came along in 1981, in the form of the scanning tunneling microscope, the first in a group of instruments called scanning probe microscopes. Rather than using light to look at a sample, a scanning probe microscope feels a sample by dragging a very sharp probe across it. The forces that the probe feels are recorded and the data used to make a picture of the surface at the atomic level. With the scanning probe microscope, researchers could make pictures of atoms for the first time.

Second, researchers needed something that let them manipulate that nanoscale world. It turns out that the scanning probe microscope could do that, too. The probe that was used to feel the surface could be used to manipulate single atoms and molecules, allowing people to rearrange the structure of matter atom-by-atom. In 1989, Don Eigler of IBM's Almaden Research Center in San Jose, CA, used individual xenon atoms to spell out I-B-M, demonstrating for the first time that it's possible to build structures at the atomic level.

The third tool isn't as obvious as the first two. To work with the stuff in this tiny world, you need to be able to see it and move it around. What's not as obvious is that you need to create models of what might be possible there. For a variety of reasons, it's not possible to predict, design, or analyze many of the features of the nanoscale world without computer modeling made possible by supercomputers.

These three tools have made the current nanotechnology revolution possible.

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Mr. Attanasio notes that this is a prolific time in his career with the recent release of Twice Dead Things, *a collection of outré fiction and experimental prose — and two new novels:* Killing with the Edge of the Moon, *a contemporary Celtic fantasy, and* The Conjure Book, *a 13-year-old girl's misadventures with a 400-year-old volume of magic spells.*

His new story is challenging, complex, and fascinating. If it seems a bit odd at first, stick with it — it will get even odder (but it will all make sense).

Telefunken Remix

By A. A. Attanasio

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What has God wrought?

— Samuel F. B. Morse, first telegraph transmission

Sierra Tree

··· ··· ···

BARELY AUDIBLE ABOVE THE sounds of rain sifting through the bedchamber's oval window, a succession of three short dulcet tones chimes thrice from a headboard alarm clock, and Noel gently rouses from the Bosom. This is what Heavinside calls sleep: the Bosom, from Old English *bôsm*, the place where secret thoughts are kept.

I better not even try to explain that! This is Noel's first thought as he rolls out from his moss hammock and strides two paces into the wash bole. While relieving himself at the commode, he opens burl wood louvers and watches morning peek from under a brim of departing rain clouds.

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Another lovely day in Saille, a willow town of Heavinside. Saille of sylvan swards and swan linns, old suburbs in paradise, croons with bird madrigals and vibrant morning mist from nearby falls. Even this tranquillity can't alleviate his anxious thoughts. Today is *the* day: the chancy day he departs Heavinside for Errth.

Lilac shadows of sunrise stretch through his heart and darken his mood with the disquieting thought that his doppel won't understand. Noel has already decided to begin by explaining why Heavinside calls the doppel's world Errth instead of Earth. "Your world is an error," he practices aloud. "Surely, many people in your time intuited correctly that life and the solar system itself were intelligently designed."

Many people in your time.... Noel cringes at his clumsiness. "*My* time?" his doppel would question — and then how would Noel convincingly convey all that had transpired in the chasm of time that separated them? Should he start off by terrifying his doppel with the fact that the human race had gone extinct long before the species' broadcasts of radio and television reached the Contexture's nearest monitor in the Andromeda Galaxy?

How much trust then could his doppel invest in the Contexture if the first thing he learned was that a Design flaw had shaped his life? How to spin the fact that the monitor in our Milky Way had malfunctioned and the all-wise Contexture never found out that the third planet circling Sol had engendered sentience — until that wayward species had destroyed itself?

The commode flushes when he stands, a braided current of waste products mewling into the slub chamber while he watches, an idea skittering across his mind. "I'll tell him about the treemerges. Of course. 'Heavinside grows everything, even our domiciles, our treemerges...our *homes*.' That's the word to use, *home*. 'The Contexture designed our homes to care for us.' Use common words to explain unfamiliar ones." Noel's inspiration absorbs his attention, and he continues out loud, glad for the confident vigor in his voice, "Let me tell you about biotecture and how it fits everything together, including effluent.'" He pauses. *Will he know that word?* "Better say *sewage*. 'What you flush away not only furthers the growth of your own treemerge but also informs it about your health so that your home grows the precise nutrients you require.' Right. Start there. *Home*. That'll put him at ease."

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The reflecting pool in the wash bole reflects a lean youth with narrow, bony shoulders, pale as a chesspiece. Noel scrutinizes his mirror image, knowing his doppel will look very much as he does, with lanky dun hair swept back from a brow orthogonal as marble, green eyes browned like baked turf, abbreviated eyebrows, mere tufts, an umlaut above that shapeless tuber of a nose, and those cupid lips, almost fey, but for his jaw wide as a boomerang.

The rain grumbles a distant farewell. "'Hello. I am Noel. I am yourself — your clone — two million years from now.'" *Stupid*, he scolds himself — then, depresses a knurled wood lever, releasing a brisk spray from the cache of rain his treemerge had collected. "'Hello, I'm Noel. Two million years from now, the Designer who misplaced your galaxy will find your shoulder-blade. I'm the memory of you made from that bone.'"

Sunlight sifts like sawdust through the branches. Under a canopy of willow withes, Noel sits cross-legged on matted turf gazing quietly at his inamorata, memorizing her features, aware he may never see her again. This is their last intimacy. Ny'a looks back at him tightly, straightening the pleats of her tunic. Her sibylline beauty surges with intelligence, irises black as if woven of darkness spun out from those watchful pupils. "What if I don't like him?"

"He's me." Noel sounds aggrieved and stops lacing his breeches. How many times has he explained this? "We're identical."

"Genetically." The plaintive edge to her voice sharpens. How many times has she pointed this out? "He's not you. He's a doppel."

"You'll like him." He sighs from far down in the hollow where he's fitting her memory. "He needs you to like him."

Ny'a leans forward. "What if he doesn't like me?"

"No chance of that." He takes both her hands. "No one on all of Errth is as beautiful as you." That was objectively true. "You're a templet — beauty herself."

"Then why are you leaving me?"

He could offer a defeated mutter — "I'm not a templet." — but doesn't have to.

Those eyes of spun darkness peer into him, trying to locate whoever is home. "You're an anamnestic. So what?"

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"Yeah." Even the name is ugly. *Anamnestic — anamnestic.* It sounds like sneezing.

Ny'a addresses him through an intransigent scowl, "How do you think your doppel is going to feel when you strand him here?"

"After what he's been through — fabulous!" This is the part of the routine where he justifies his reasons. But the discussion won't end until he justifies his heart. That's all she cares about. These past twelve moons, while she helped with preparations for the transfer, they had modulated this argument numerous ways. He frowns as if reading the cryptic weave of shadow from under the willow's bell. "His life is accidental. The ones who succeed on Errth are designing men and women. Buying and selling with skill and greed stronger than love. The rest drift, buffeted by events. I'm sure he's one of them."

"So?" Emotion throttles her voice. "That was two million years ago, Noel. He's not hurting."

"I am, Ny'a." He notices he's been squeezing her hands, releases them and stands. "You know compassion compels us." Her pointed stare directs him to continue the routine. Today the words mean more, because they are final. "I have a treemerge. I have you. I have all Heavinside to prepare me for success on Errth. How can I leave him there when he has none of these advantages?"

"You have a place here — with me."

"You're a templet. You belong in Heavinside. Me...well, look at me. I'm a memory of Errth, a crisis of imprecision."

"What is that supposed to mean?" She leans back on her elbows, gazing up at him with those midnight eyes. She decides to skip the tired argument that "anamnestics make our culture stronger" and goes straight to the obvious truth: "Doppels have it harder here." She doesn't have to explain. Doppels remember Errth — and, in Heavinside, that's always a trauma. Some treemerges never manage to calm their new hosts without wiping memories. All the while, the doppel is useless in the Bosom.

And that's the real difficulty. That's why the design managers discourage exchanges. The managers are the good neighbors from hyperspace, from the Contexture, who call themselves Sierra Tree, a name they think sounds simian-friendly. Interchanges between Heavinside and Errth are a complex, maddening process for design managers *and* the

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templet, a burden too dubious for anything but love to bear. Of course, Ny'a does love him. The Contexture designed her specifically to love him, and with a woeful huff she pushes to her feet, effectively terminating her dissent. "So, I'm trading a crisis of imprecision for a precise crisis. Lucky me."

His smile brokers her disapproving frown to a joke on himself. "I'm the one who's going to need luck."

"Is that what the Tree told you?" A sweep of her arm parts willow withes like draperies, disclosing an afternoon tending toward amber and a storybook vista of varied terrain, surging hills with treemerges among conifer woods, heather tracts and sky lakes. "They tell you to take your luck with you?"

"Again and again. This first trip is preliminary. They need to set their calipers. 'Do I accept the stochastic hazard of zero portal travel? Do I realize that if vacuum fluctuations deviate from the calibrations even slightly.... ' Well then, it's breakfast with the dinosaurs for me." He takes her hand, and they stroll from sequined shadows into brash sunlight. "Luck — that's a sphinx with sharp claws!"

The rising red moon impersonates a vast furnace. Noel kisses Ny'a, and she presses hard against him. "We love each other," she whispers sharp with spit and body heat against his cheek, then pushes into his palm something hard and cool. "For luck."

"Zero portal open!" Design managers speak from a safe distance, cloaked in night among the ponderosas. "Liminal boundary fifteen minutes! — Go now!"

An afflicted glance over his shoulder fixes on plastinated faces watching impassively from the forest's dark apertures. Those glyptic masks promise no mercy if he doesn't return after fifteen minutes on Errth — then, *pffft!* — the very strings that weave his atoms unravel...and nothing of him will remain, not even a ghost imprint in the vacuum.

A last look burns between Noel and Ny'a, and he turns to the zero portal. It is an empty glade where moonlight punches through the trees. He advances tentatively, heart shaking, head held high like a blind man — until the design managers shout, "Go now! Now, Noel! *Now!*"

He rushes forward across springy grass. Moonlight crests like a wave.

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For a reeling moment, he feels motherless and welded to sorrow. The next instant, macadam smacked the soles of his sandals. Halogen light smothered the moon. And a curdled reek of sewer and river ammonia hooked his sinuses. The field and enclosing ponderosas were gone, replaced by cathedral vaults under a massive bridge. A choir of pigeons sat in drowsy attendance along spans of high steel scaffolding and, in the distance, the electric necklace of another colossal bridge.

A lone figure in sneakers, baggy denims, and a dark hooded jacket leaned on an iron railing under visionary lamplight. When Noel emerged from slant shadows thrown down by the bridge's giant stanchions, the solitary river-watcher turned and staggered aside so violently his hood flew back, revealing a frightened reflection of Noel, identical except for shaved temples and a rusty stripe of chin whiskers.

"What the — "

"Don't be afraid." Noel came out of the dark wearing his Heavinside apparel, a wide-necked blouse of silver panes, pale breeches thewed and braided with knotcord, sandals intricately laced. Orange lamplight diffusing off that monochrome fabric made him look like an archaic, bereaved ghost, long hair afloat upon the river wind. "I'm not going to hurt you."

"Yo — don't come no closer!"

Noel stopped on the sooty cobbles. "I don't have much time."

"Damn!" The doppel expelled shock in a heightened whisper, eyes buzzed, body twisting full to one side ready to kick off. "This is whack! Who are you?"

"I'm Noel." Trying to throw him a smile, Noel grimaced. "I'm your clone."

The word flew right by him. "Noel? You my twin or something?"

"Something like that." Noel lifted his chin and extended his right hand, intending to ask, 'What's your name?' Instead, the doppel backed away as if Noel had raised a bruise-knuckled fist, muttering, "I got no twin." And, too late, after gravity made its claim, Noel recalled the small, hard object Ny'a had slipped into his palm.

Clinking clear as ice, a jade coin bounced on the dirty cobbles. *For luck*, Ny'a had said, and he gaped at...well, the name for this object is an obscenity in Heavinside: *obol*. Every templet has one. A metastasis obol — infinity-in-a-thimble, bride-to-God, fate's coin. It connects the templet

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directly to the Contexture. Such intimacy with the Designer imparts experiences so transhuman language fails — and when templets force into words these intimacies, when they speak aloud their observations from hyperspace of our organic existence, they offend bluntly: *Mind is the rutted track of Context. — A pouch of hungry ghosts, such is life. — The filthiest body part is the mouth, and everything spoken is filth.* Templets learn to avoid discussing the Contexture, people don't ask, and the obol usually adheres to a less filthy and customarily hidden body part.

Beyond the vulgarity of Ny'a's obol rolling on the ground, Noel's heart hit a gallop because he knew that the Contexture could not regulate Ny'a's biokinesis without it on her person. She would die in days.

The obol caromed to a stop between the doppel's sneakers, and the doppel squatted to pick it up.

"Give me that." The urgent command spooked the twin, and as Noel strode briskly forward, the stranger bolted. "Hey! I need that!" He chased after, baying, "Stop!"

The doppel ran soundlessly off the main promenade onto drear paths, and when his hood went up, he vanished among shadows in the city's somnolent streets.

SUNSET LAYERS the west in snake-bands. Under the ponderosas, design managers are skeletal silhouettes with lambent faces blunt and lobed as moray eels. They remind Noel and Ny'a that death is a clear destination in Heavinside. No one dies by accident or homicidal intent. The Contexture patterns every mortal moment to the dead-certain and final secret joy assured all. "Yet, if your doppel does not exchange with you, or returns without the obol, what can Sierra Tree do for Ny'a? On Errth, we have no dominion, no way to retrieve her obol." Their somniferous voices are transparent to the silence behind. "We instructed you carefully about the preliminary trip. You knew to transport naught with you save the clothes you wore."

A light wind carries a concussion of odors from far in the big forest. Noel draws a breath of resinous air full of pine balsam and leaf incense, and before he can answer, Ny'a speaks up, "I told you already, I pressed it on him at the last instant. If he didn't come back, if something went wrong with your calibrations, I didn't want to live."

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Noel waits on a reply. All he hears is his heart. Ruby carats glitter in the far keeps of the woods. Before that bejeweled world, the managers move as shadow creatures, taking their own counsel. Voices riffle. "If your doppel arrives here at all, he arrives with the obol — or Ny'a goes to her final secret joy within days. And with her gone, your doppel is without a template. For him, Sierra Tree must then make special accommodations. That is troublesome for us."

On the walk back to the treemerges of Saille, under nightfall long and purple, Noel admits, "He's not who I thought he'd be."

"The doppel."

Noel casts a contemptuous look at the carpet of pine needles and erratic mushrooms. "He looks like I do, but he's not me."

"Of course not." In frail starlight, the moon not yet risen, she stops, and her sinuous hair settles across her shoulders and the ardor of her face like swirled ink. "He lives on Errth, Noel. What did you think?"

"I thought...well, I thought I would know him better." He lifts a stricken look and meets a face as full of sorrow as a bucket brims with water. "He didn't recognize me. I was just a ghost to him. And, I see now, he's no more than a ghost to me. That whole world, Ny'a — it's just a dream gone bad."

"What are you going to do?"

"I'm going, just as I planned." He starts walking again, with determined strides. "I have to now. I'll bring back your obol."

"You?" She firmly takes his elbow and fixes him with a cinched stare, restraining her hope. "You're coming back? To me?"

"You were right, Ny'a. You wouldn't like him." His damaged expression heals a little at the sound of her surprise. "I'm sorry, sorry I even started this crazy misadventure. I'll get the obol and come back with it."

"If he hasn't lost it," she whispers.

"I'll find it," he whispers back.

They clasp hands and meander out of the woods to a pond zebra-striped with looming shadows from the forest. On a shale ledge above a gravel beach, they sit together, and he leans his face into her hair, inhaling deeply, the scent of her the philosophy he intends to take with him.

"We're always going to be together," she assures him, "even if you don't come back."

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"I'm coming back."

"That certainty stays here in Heavinside." A moonbeam through the trees lies at their feet like a dagger. "On Errth, nothing is certain, Noel. Nothing except dying."

The Clock's Cryptic Face

SUNLIGHT SIFTED like sawdust through the branches. Leon sat on the back of a park bench, high top sneakers on the seat, inspecting the jade piece he'd picked up yesterday from his double. Smaller than a quarter, bigger than a nickel, thinner than a dime, it felt cool like something refrigerated. No matter how long he palmed it or held it in the sun, it remained cool. On each face of its polished green surface, it bore nine dots: ··· ··· ··· and nothing else. "Sacrament here." He muttered his pitch as prospective buyers ambled past his bench. "Chalk dust. Tar angel. Sacrament."

Turtles approached, flat-palming him cash and smooth as a handshake taking a color-coded blotter to trade for their score at the far end of the park. The work bored him, a temp job these past eight months, with no chance to boost product or steal cash from this bottom-end street operation. But he liked the hours, sitting in the park, earning enough in four more months to open his own house and go wholesale. He usually could feel his brain vibrate when he contemplated the staggering possibilities. Not today. The jade piece imparted a watchful serenity as he turned it this way and that. "Sacrament here. Chalk dust. Tar angel."

"What you got there, Leon?" This soft voice rolling out words dark as blueberries belonged to the only person who mattered in his world. "Lemme see."

Without looking over his shoulder, he upheld the jade wafer, and long, clear fingernails with French manicured licorice tips plucked it away. A sigh immediately followed, sharp as the fulcrum point just before climax. He gave a lopsided smile to the sunny acres. "Cool, yeah?"

"Like ice." She slid onto the park bench, sitting between his legs. In wraparound sunglasses, black camisole, tight sable pants and jet ribbon

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ankle-wrap sandals, she looked slinky as a shadow at high noon. "What is it?"

"Like I know." He told her how he got it from his twin in the dead of night under the bridge.

The jade reflection clicked in her dark lenses as she walked it between her fingers. "You were tweaked!"

He grabbed her black, chopped hair in a fist and gently shook her head. "You know better."

"For real?"

"Like looking in a mirror. But with long hair and no patch." He stared at the afternoon shadows on the tessellated pavement as if trying to solve a geometry problem. "Who you think he is?"

A turtle scuffled up, and during the transaction, she slipped the wafer between her peach-glossed lips. The chill hurt her teeth, and that ache rang like bravery in her soul, a grievous glory to find herself here on this park bench where money buys the most desperate happiness on the planet — and she wants none of it because of a shrewd fear she inherited from the stoned sadness of her mother and the unwept loneliness of a sister weary of everything but the blue smoke in a glass pipe. She spit it out.

"Hey!" Leon leapfrogged her, almost bowling over the turtle to get to the jade coin on its wayward roll among pavement cracks and cigarette butts. "What's your problem, Taima?"

Taima held him in an eyelock right through those dark glasses. "That thing was stealing my head."

"Yeah." With a helpless grin of agreement, he plucked it from the ground. "You noticed that too. How you figure?"

She slung her jaw to one side, contemplating her indignation, and dropped her voice, "It's spooky, Leon. Lose it."

"You crazy?" He spun around and sat next to her, holding the jade piece before them. It shone coolly in the sunlight. "This here is some kind of magic."

Brittle stars write a Braille of blind chance across the heavens. Noel proceeds alone upon a flagstone path in an old, forsaken garden outside Saille. Vaporous moonbeams light the way among knuckled crabapple trees and mossy rock heaps of a fallen wall. Kragh the Hermit, a short,

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brutish man wearing the tawed leathers of animals he has killed, has come down from his stone hut in a high country of vast heath and silver weather. At each full moon, for the last eighty moons, Kragh has met Noel and other curious anamnestics among indomitable, brooding trees in a blue hush of moonsmoke. The drama is the point that sews them together: this theater of the wild world, the broken world.

Like Noel, Kragh is an anamnestic, but unlike his avid disciple, the Hermit long ago abandoned his treemerge to live by his own wits and the wilderness's bounty. He sits upright among toadstools and fireflies in an amphitheater of disheveled garden terraces.

"Know El!" His husky voice booms among hardwoods bearded in peavine. One of Kragh's many other adherents had been a doppel, a rabbi when on Errth, and from him the Hermit has learned that El is a Biblical name of God, and he delights in exhorting Noel to remember that his name means to be born and "If you're born here in Heavinside, you surely know El." Kragh can be funny, but he isn't spiritual in any traditional sense and when pressed will only reluctantly admit, "The world itself is scripture."

Noel sits heavily on the ground. With breaths tight as sobs, he relates what has happened.

"First, steady yourself." Kragh leans forward, greased braids of beaded hair clicking. "Errth is no place for emotional fools."

"I, never should, have gone."

"Given. But now you're going again. You must." The inner quiet Kragh radiates purifies Noel's attention, and the sobs stop. "That's why you sent for me."

Noel wipes tears with his wrists.

"Your doppel is not you." Kragh sits back in the dark, Mongoloid eyefolds like incisions. "Repeat that."

"My doppel is not me."

"People die on Errth by error and malevolence each minute of every hour on any given day."

Noel's head hangs heavily between his shoulders. "This isn't news, Kragh."

The Hermit's dark copper skin seems to absorb moonlight, giving none back. "Whoever your doppel is, he has suffered. He lives on Errth where no happiness goes unwept for long. He will prove dangerous."

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"My treemerge has prepared me." Anger edges Noel. "Listen, old fellow, you're the reason I started thinking about trading places with my doppel." He tilts his head back at an accusatory angle. "Your philosophy is about living authentically, right? Being your own true self. That's what I decided to do. Live in the wild and broken world. It was supposed to be an act of compassion. Now it's all gone wrong. And I don't know if I can fix it. I may not make it back. So I came to say good-bye."

"What makes a good-bye good, Know El?" Kragh beams, full of himself, wise wayfarer, hunter of animals and aphorisms. He proudly unrolls an old trophy: "We wave to show our hand is empty. An empty hand, full of longing."

"I think we can file that under casuistry."

"Spoken by a man who has his food grown for him." Kragh barks a laugh. "When you have to feed yourself, you soon realize Hello and Good-bye happen. Empty and Full. There are no choices except in dreams, and most people don't dream well enough to own even those choices."

Noel lowers his face into his palms. "I don't think I ever really understood you."

"Good." Kragh places hands hard and brown as bricks on Noel's shoulders. "Now we have someplace to go when you return."

Sunset layered the west in snake-bands. Leon and Taima stood beneath the steel undercarriage of a colossal bridge. "I saw him right here." Adrenaline wafted through him, and he ran in place, full of chagrin. "I lost it! He tried talking. Told me his name. And I freaked. I just lit out."

"But you didn't totally freak." Taima sidled up behind and slipped her hands into the pockets of his black zipper jacket. "You got the jade thingee."

He pressed back against her. "Yeah."

"What was his name?"

"Joel...no, wait. Noel." From out the pocket of his jeans, he drew the jade and rotated himself in Taima's embrace until he faced her, noses almost touching. "I'm thinking maybe with us here together with the thing, you know, where I first got it, like we might...*sense* something."

The honey depths of her eyes evinced assent. She clasped her hands atop his, and the obol, two million years out of place, transformed twilight

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into a flaming sword. With the burning edge of day sheathing itself once more in darkness, a black thought shadowed both their minds simultaneously. An angel had decisively banished them and their world entire into a darkness of accident and crime before brusquely withdrawing to some brighter reality undisclosed, forbidden, leaving them alone together in gray obscurity growing darker.

They sprang apart, and the obol jingled on the cobbles.

"God, Leon!" Taima covered her mouth with both hands and gazed hard at him through a blear of hot tears. "God!"

"Buggin'!" Leon grinned with surly bravado and squatted over the obol yet did not touch it. "What happened?"

"You felt it, Leon." She backed off. "I felt you feeling it."

His shoulders rippled. "Yeah, I felt it. It felt like taking a breath on a really cold night. In some strange place far from home. And that unreal lonely feeling gets down all inside you like you don't even have a home."

"That's damnation, Leon." She kept backing off. "It felt like being damned."

"*Damnation!*" He laughed half-heartedly. "Where'd you pick that up, Taima. Sunday school?"

She looked away at a river gray as pavement and a red stain lingering in the sky. "Tell me you never went to Sunday school."

"My house, Sunday was just another day watching out for my drunk moms and her stoner boyfriends." He picked up the obol, and the deformed loneliness in it was gone. Gone deep into his heart, something informed him, something that had found its own way far in and stood looking around at ground zero in the core of him, a core he had never even known was there. Through a remote voice, he heard himself speaking, "Cross her any day and Sunday, she don't smack you, she sticks you with her cigarette at the back of the neck under the hair where the burn don't show."

Taima kept looking away as if ashamed. "Leave that thing there, Leon. Let's go." She extended a hand for him without turning. "Come on, baby. Let's get out of here."

Leon pocketed the jade piece and bounced upright. He took Taima's hand, and they hurried off in the violet air. Strangeness accompanied them. Their footfalls resounded as in a cave. Spurts of light, small and brief

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as match flares, swirled along the river-railing and dimmed to retinal shadows when looked at directly. And all the while, in their hearts, sadness folded like wind through a wheat field.

"You kept it." She stopped short and faced him, outraged. "Leon." She let his name hang a culpable moment, then took his elbow and towed him to the railing. "Throw it in the river."

He shuffled uncomfortably.

"Throw it — or I walk."

He jutted his lower lip, then shrugged and turned away. "So walk."

Night hoists Orion* into the sky. In that large, open field enclosed by ponderosa giants, the Many Worlds swirl as diaphanous rainbows, a tipped-over whirlpool. The moon is not yet up, and darkness makes visible the faint vortex of hypnotic spectra that is the zero portal. When shouts pounce from the night forest — "Go, Noel! Go now!" — Noel doesn't bother looking over his shoulder for Ny'a. The design managers have forbidden her coming anywhere near the zero portal. He purposefully strides into the whorl of chromatic transparencies.

So finely tuned are the portal calibrations from Noel's preliminary crossing that he experiences no emotional displacement whatsoever. Tall trunks with boughs creaking like saddles vanish, and he doesn't even blink when the city of night leaps forward. A convergence of car exhaust, sewer stench, pulsating garbage fumes and a din of traffic noise greeted him. He breathed it in, this anguished scent of wild and despoiled humanity, and he scanned the nocturnal street for his own face, ignoring the city's misery, vagrantly sorrowing sirens Doppler shifting across town.

He spotted his doppel through the heavily lettered storefront window of a Cuban-Chinese restaurant. His original self sat across a small formica

*Proper motion of the stars in the constellation Orion will, over two million years, snap the famous Belt and distort the familiar trapezoid of the Hunter's torso to an anvil pattern. Far more dramatically, the massive red giant Betelgeuse will, long before, have vanished in a supernova, leaving behind the spectacular Blue Rose Nebula, by the time of our story a contusion of purple and maroon gas clouds perhaps more aptly named the Black Eye Nebula.

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tabletop from a young, angular woman with hair like clipped raven feathers. They were arguing stiffly, unwilling to make a scene, though there was no one else in the restaurant to notice except the tired woman with tarnished skin at the take-out counter.

Underground thunder of a subway tolled as Noel sidestepped among hurrying pedestrians and shoved through the glass door of the restaurant. The doppel noticed him at once and stood up so abruptly his chair crashed backward.

The young woman in black twisted in her seat and gaped at Leon's twin dressed in white and silver motley like a ghost harlequin.

Noel walked directly to his doppel and stood very close, eyes venomous, staring hard into his own startled stare, and said down low, "Give me what you took."

"What?" The doppel blinked as if not comprehending.

"It's in your left pants pocket." From the instant he pushed through the door, Noel felt the attenuated passage to Ny'a, a soulful swoon across two million years to where she waited, dying. "I will take it."

The doppel swaggered back a step. "Damn — who *are* you?"

"Leon — " At the core of the woman's amazed stare comprehension dimly swirled. "It's his."

"Shut up, Taima!" Leon slashed forward, blurred fist aimed at Noel's nose. Noel turned from the waist and caught his assailant's fist in a peculiar overhand grip that electrocuted the whole arm. A screech seared from Leon.

Noel, holding the tormented arm in a nerve-lock, reached into Leon's left pants pocket and extricated the obol. Then he stepped on the fallen chair, levering it upright, and dropped his agonized doppel into it. In Noel's palm, the jade squeezed radiance from the sponges in his bones. He smiled good-naturedly at the startled woman behind the takeout counter and pushed into the street.

"Wait up." Taima scurried after him. "Slow down."

Noel paused in the pedestrian flow. Garlanded in a backwash of body odor, diesel smoke, and the meaty pungency of garbage, he exulted to *be* here under hieroglyphic neon, and he turned a gentle countenance on the amazed young woman.

* * *

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Telefunken Remix

BRITTLE STARS WROTE a Braille of blind chance across the heavens. Vandals had stoned the park lamps, pulling the constellations closer to a darkness that ranged inviolate among trees stamped like thunderheads against the bright cityscape. "Hold up." Taima clung to Leon, and they both stopped on the street corner before the pitch-black entry to the park. "Too wild in there at night."

"It's all right." Noel's pale raiment floated into blackness. "We need someplace private to talk. You said you wanted to talk. Right?"

"Yeah." Leon danced in place, throwing nervous glances, looking for the maniacal baseheads and gang thugs that worked this street at night. "But we don't wanna get rolled."

"We won't." Noel lifted the obol, and the dark around it breathed with luck and a faint, amethyst aura. "My scent keeps hostiles at bay. Except for you, Leon. I guess because we're genetically identical. Sorry I had to hurt you."

"Your scent?" Leon flexed his fist, which still felt numbed. "You know you don't make sense?"

"I know." Noel cocked his head minutely. "Come on."

They sat at a picnic table under clotted stars and murky whey of city lights, and Noel quietly began his story. "In December 1901, a German investment group, Telefunken SenderSysteme Berlin, paid for Guglielmo Marconi to set up a receiver station in Newfoundland. With that equipment, Marconi listened to three short clicks three times — a Morse code signal for S...S...S transmitted across the Atlantic without wires. It changed the world, because it proved radio transmissions could travel over the horizon. Not long afterward, a British physicist, Oliver Heaviside, postulated the existence of a layer of ionized air in the upper atmosphere that reflects radio signals — the Heaviside layer, now called the ionosphere."

Even by star-glimmer, Noel saw them peering at him like he was a head case.

"That signal reached the nearest galaxy two million years later." Noel let that compute. "An advanced communication system heard it and

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knew immediately that this planet had evolved an intelligent species. But by then humanity was long extinct."

"Extinct?" Incomprehension knotted Leon's stubby eyebrows. "We're still here."

"He's from the future, Leon." Taima's expression went placid, sure and nearly prophetic as she fit together the fact of Leon's twin with the jade coin that had so easily purchased all the memories of her soul. "Who are you? Why do you look like Leon?"

Noel wanted them to understand. In their world run amok, any explanation was better than none, even if they misconstrued it. So, he told them about the Contexture that had designed all the membrane universes, each brane a memory card in a cosmic computer contrived to process in hyperspace a program beyond human comprehension. He labored to explain how each brane unpacked its own circuitry out of fundamental forces and elements to produce microprocessing units: brains capable of complex metacognitive functions. To locate and properly nurture these brains among the branes, the Contexture "listened" for early signals from DNA — barcode pulses of biogenerated photons — but the "listening device" in the Milky Way had malfunctioned, and the Contexture didn't — *wouldn't* — learn about humans and cetaceans for over two million years, not until *S...S...S* arrived at Andromeda.

He had begun his account of Heavinside when something like a giant rainbow of cigarette smoke swirled open soundlessly alongside the picnic table. Leon and Taima leaped up shouting.

"What *is* that?" Leon scampered backward.

Taima knew, and she moved toward it, eyes stark, fingers vibrating.

"Taima — no!" Noel yelled and stumbled getting up from the picnic bench.

Leon lunged for her, spun her around by her arm and toppled backward. He flopped into the zero portal, face a silent yelp, and vanished with a sizzling pop gentle as a soda can snapping open.

In the glassy air, nimbus clouds float like pieces of light. Leon rouses to silken quietude and a lavender fragrance of chaparral sage. Thoughts stand in him tranquil as blue flames: *Love is my kingdom, mystery the*

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boundary mountains far away — and the longing to cross. But not yet, that secret joy....

"It's all right." A scent sweet as sawdust and lonely as an empire of rain sits him up, and he faces a young woman whose Asian eyes, indolent and wise, shine with rapture in a sphinx face of animal magic, tawny, flat-nosed, her Nubian mouth carved for enigma. "Everything is all right now."

"Who — "

"I am Ny'a, Noel's templet." She eases him to his feet, one strong hand under his arm, and stands back, a tall, athletic woman with black-blue hair loosely braided to her waist in saffron ribbons, tunic pleated indigo and pressed mauve against her concupiscent contours. Under a lucent vault of heaven, ponderosas toss sunlight and wind. "Welcome to Heavinside."

The child in him weeps at the beauty. "How...I don't understand what...."

Ny'a's look of tangible concern shushes him. "Your treemerge will explain everything. Give it a day or two."

"My what?"

"Didn't Noel tell you about the treemerges?" Confusion frills her words. "He said he'd start with that." The creases across her brow rinse away as she figures out, "Something happened."

Leon's legs feel unstrung, and he sits down and gazes off into the sky itself, the well in his heart full of echoes. *He's from the future, Leon.* "Taima...."

Ny'a squats in front of him, and the sky in her black eyes lights a shining path straight into his heart. "Tell me what happened."

He hears himself entranced, as in a heroin bubble, recounting everything, every detail, like a child unsure what's important. When he's done, she stands and meanders off toward the great avenues of trees. He scrambles to scurry after. "You sending me back?"

"Can't." Ny'a shrugs. "Sierra Tree isn't a travel agency."

"Who's Sierra Tree?"

"Phonetic alphabet." Her words go soft, spiritless. "Letter S three times — the first radio signal. The Contexture is like that. It builds from what it's given. That's why Modern English in Saille. It's different elsewhere."

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"The computer thing." Leon puffs to keep up. "Noel says people are like in a computer."

"When we sleep, we go online and process pieces of whatever program the Contexture is running in hyperspace." She talks like a sleeper. "It's the Bosom."

"Bosom — you mean, like breasts?"

"Sleep is the place of purpose. All else is goalless." She faces him with taxidermy eyes. "Fun."

"This Contexture — Sierra Tree...." He hops a buttress root as they enter the treeline. "Can I talk with it?"

"You already are. Design managers hear and see everything in Saille."

"I gotta go back!" He starts talking loudly to the trees. "Taima and me...we're tight. We got plans. I can't leave her like this."

"Noel will watch after her."

"And what? You're watching after me?"

"No. Your treemerge will take care of you."

"What about you?"

She continues in her defeated voice, not stopping, not looking at him. "The treemerge — that's home now. It will provide everything you want to know."

"No, I mean, *you*." He jumps ahead and turns to confront those eyes showing damage. "I don't wanna learn from a tree. I wanna learn from you."

"I'm sorry, Leon." She shakes her head no, moves on. "There's been a mistake. I can't be with you."

"A mistake? In this place?" His tone sneers, like a throw-down challenge. "What kind of hamsters are these design managers?"

Ny'a just keeps walking.

Night hoisted Orion into the sky. Noel marveled at its fidelity to the image his treemerge had implanted. Two million years of stardrift, a glyph in the dark....

"You listening to me?" Taima glared, livid. "Leon is gone!"

"This is Errth. It's a world of accidents." Noel lowered an inconsolable twinkle, eyes brimming. "I thought I thought of everything." He regarded the obol, and it looked really small.

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"Oh, God!" Taima grabbed his arm. "Come on!"

Noel followed her alarmed gaze. A mongrel gang loomed out of the night, eight wild boys with twisted hair or bald, half naked or clad in remnant leather. They came on with headlong intent, leaning into their stride. He met their burnt, mad dog stares blandly, and they staggered to a stop, stumbling into one another. As if death's racehorse had abruptly reared out of the night behind Noel, they scattered, veering swiftly into the dark.

Taima watched after them with a jangled stare. "What just happened?"

"They got a whiff of me." He returned his attention to the obol. "It's something I ate."

Weighted with shock and lunacy, she lowered herself onto a picnic bench. The night flowed in.

Noel heaved a haggard sigh, stood and thumbed the obol into his pocket. "Leon is going to be all right."

"No, he's not." Taima twisted at the shoulders to show him a face congested with emphatic sorrow and bitterness. "He's not with me."

He sat down again. "You're right." And added in a plummeting whisper, "I'm sorry."

Taima rocked softly. Noel lifted his gaze to the stars, sullen and mute, and thought of Kragh and his barking laugh. *Errth is no place for emotional fools.* Errth belonged to El — and if El had any design at all on Errth it had to be teaching people to live profoundly free, independent of all designs — including El. *No El.*

"So, what's it like for Leon?" She didn't look at him and sat slack, bottomed out. "Will he be happy where you come from?"

He smiled up at Orion. "Oh, yes." Inhaling a deep lungful of Errth's industrial night, he added, "Heavinside is about fulfillment — right to the final secret joy."

"Yeah?" She slid him a skeptical squint. "So why did you get out?"

"Compassion. I thought I could help. No one disagreed." He shrunk around a wounded silence, then added, "Except for Ny'a."

"Your woman?"

"And more." Another hypnotic moment closed on him. "Something beyond gender."

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"Soulmate."

"Something like that."

"That was Leon and me. We had plans. Bigger than what beat us down." Her lips began moving without sound, finally whispered, "Ny'a will take care of him?"

"No." That syllable opened an abyss he wasn't ready to peer into, and he touched the obol through the fabric of his pocket. "He won't need Ny'a. Heavinside has a place for him. I'm his clone...his twin — "

"I know what a clone is. Like that sheep that was its own mother." She studied him openly. In the dark, a tendon seemed to flex between her eyes, reason and madness wrestling in her. "You look just like Leon. It's spooky. Is there a clone of me in heaven's side, too?"

"Maybe. There are a lot of clones." He met her appraising eyes, let her brave his ill-begotten mirror-likeness of her love and speculated when the misery of her loss would truly kick in. "I am sorry about Leon. I...."

Vaporous rainbows spun under the trees, and Taima leaped up. "Leon!" Before Noel could stop her, she rushed at that whorl of prismatic gas and collided with a tall, imposing woman who grabbed her arms, twirled and tossed Taima into the zero portal.

CIRRUS CLOUDS WEAVE the blue sky like spider's silk. In a Matisse landscape of gorse slopes and jutting boulders, giant, bristle-bough trees parry the wind. Taima and Leon descend from that timberland holding hands, wading through alpine flowers. "It's not heaven's *side*, baby." Leon speaks in a jacked up rush of shared joy. "It's Heavinside, *heaven* and *inside* mashed together. It's like Noel said, the Contexture named stuff here to honor our first radio signal, our shout out to the cosmos. Heaviside was one of the scientists who figured out radio, so this world's name plays off that. *And* it's a clue to what's really going down here, on the inside. You'll see for yourself when you catch some Zs later. That forest back there? That's Morse Woods after Samuel Morse who invented the telegraph. And Sierra Tree — the Morse signal Marconi received? That's the design managers' tag. The managers keep things running smooth in Heavinside, but they're not really human. They're like pieces of dreams. You'll see."

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"Whoa, baby." Taima hugs him. "Slow down." His solidity assures her *she* isn't dreaming. The air furls with seed confetti and dandelion parasols. "I'm happy to see you, too. I thought I'd lost you."

He nibbles her earlobe then smiles deeper than she's ever seen him smile. "Sierra Tree stepped up when I pointed out it was their sorry asses messed up. They are not down with messes."

She touches him with a mischievous grin. "Then how are we supposed to fit in?"

"We're not screw-ups no more, Taima. That's all in the past — like two million years past. Look around!" Sunlight marches cloud shadows over rhododendron fields and evergreen vales. Cascades weave rainbows and thread rivulets and brooks across pastures of purple asters and through dwarf pine parkland. Crimson and yellow gliders turn and turn in the deep blue on updrafts from the canyons, and silver dhows with solar sails glide upstream. "It's all hang time here, baby. No work. No sickness. No getting old."

"And babies?"

Leon turtles his head back in mock dismay. "You still on about that?"

"Well?"

"We got to get you a meal." He steers her with an arm about her shoulders, continuing their pathless descent toward green gorges and ribbon waterfalls. "True story. Been here three days. Learned everything from the food."

Eyebrows go high. "The food?"

"Yeah! Look — see those trees?" He pauses and chin-points to remote hilltops crowned with solitary baobabs and banyans, stupendous arbors of stout girth. "They're treemerges, like from jamming *tree* and *emerge*, because everything we need emerges from them. One of those treemerges is ours. It was Noel's, but it's designed just for me, because he was my clone. Clones are anamnestics, which means something that's remembered. He was a memory of me, so this treemerge is mine. And it's yours now, too. You know that keychain you made for me with your hair? I gave it to the treemerge. Now it's wise to everything about you. The vitamins you need. The food you like. What makes you laugh. Everything."

She watches gusts of emerald finches careen through the limpid air. "Sounds scary."

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"Not as scary as the street. There *is* no street here. The whole world's a tree park. It's designed for the satisfaction of simians." He slaps his chest ape-like. "That's what we are. You know that?"

"What if we want to get around, go someplace else?" A dragonfly zips past, bound for sparkling streams and paradisal fords. "I always wanted to see Paris."

"There is no Paris." They walk together, rubbing ribs. "But in a world without heartbreak, who needs Paris?"

Unparalleled Universe

IN THE GLASSY AIR, nimbus clouds floated like pieces of light. "I'm cold." Ny'a pressed tighter against Noel. Their first night on Errth, sharing a park bench, they hadn't talked much, already understanding each other. The future was their past. They had eaten of the Tree — he to protect and provide for himself in place of his doppel, she to know the Errth taking him from her. What lay ahead, they carried in memory, every bend and swerve of this tragic worldline that fettered events to the history of their future. They knew what shame hid behind the hands that covered the clock's cryptic face. No understanding, no intelligence could unclasp those hands. Only deeds, mortal acts, might force them open. Then, the worldline would unfurl to a worldsheet, a tapestry of many possible histories.

Those for whom the future is a memory can't speak of mortal acts intended to deny what cannot not be. The design managers had warned them. Words are actions, neural activity whose light cones not only illuminate the worldsheet but also expand into the worldvolume entangling other worldsheets, strange ones that often befoul spoken intent. So, they had cuddled together silently on the park bench until daylight.

Steel and glass monoliths of the city, in the dark some kind of radiant code, now appeared for what they really were, solid geometry, congruent as a honeycomb. "And I'm hungry."

Noel eased her off his shoulder and dug into his pocket. "You have your obol."

She blinked lazily at the polished jade hoarding sunlight between Noel's fingers. "I can use it here?"

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"Why not?"

As soon as she took it, its resonance cavities, tuned precisely to the quantum antennae of her DNA, replenished her cells with energy drawn from the vacuum current of spacetime. Her chest rose with a gratified inhalation, and those bituminous eyes brightened to wistful clairvoyance. "What about you?"

"I came here for the mortal dangers." He nudged her with his elbow. "But I didn't expect I'd have to share them."

She fixed on him without humor. "You must be hungry."

"I am."

"How will you eat?"

He could tell she already knew. This was the turning point. That was why he had waited till morning to return her obol. He knew that the instant her strength returned she would want action. She had forsaken Heavinside for him. Now, in every direction, danger beckoned. They would live as wolves or not live at all. She needed him, Mister Compassion, to say it aloud. "I will take from the strongman."

"I'll help you."

"Never doubted."

They got up and prowled the park. Turtles approached, mistaking him for Leon, and he swept them aside, scanning for dopeslingers. The reemerge had fed them stories and strategies for this epoch, yet they knew almost nothing about Leon — only what he had confided to Noel outside the Cuban-Chinese restaurant. If Taima had not come after him...if he had returned directly to Heavinside with the obol and not lingered to explain....

"Talk to me," Taima had insisted. In neon shadows, her fevered scowl had slewed toward tears. "We didn't ask for any of this. You found us. And that jade you dropped on Leon screwed with us. Then you show up to take it back and you hurt him. You can't just walk away now."

"Noel, you're phasing." Ny'a slipped her arm around his waist. "You were right to come here. We are right to stay and make our own way on earth."

Noel nodded. His attention shimmered with memories Leon had shared about his felonious life in the park. Among the gingko trees ahead, in a leopard spray of shadows, a figure stood out from morning joggers, dog

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walkers and turtles — one of Leon's rivals, a gaunt player with a chewed face, pocked and pitted. Noel went straight for him. Head shoved forward, eyes squarely leveled, body language proved sufficient to provoke the strongman. Gnawed face snarling, he came forward, and in three strides went down on his knees and wept.

The rising red moon impersonated a vast furnace. Lunar silhouettes, Noel and Ny'a stood at the crest of an access path through a landfill. Night above, sugared with stars, flicked needles of green light, and the cool air stank of decay. Below, a limousine waited in a marshaling yard, high beams illuminating a cane road to the highway.

The most powerful crime boss of the northeast, a strongman with government connections, occupied the limo, observing the scene on a laptop monitor from a tiny roof camera. He centered on the young couple in their strange apparel.

At his command, a sniper took down the woman. Skull shards flew like sod from a divot.

He didn't dare kill the man yet. This Leon, a low-level cashier, had terrorized all the managers of the city franchise. *How*? Threats had reached the regional protector, the crime boss's boss, who wanted this straightened out pronto — or else the crime boss would lose protection and become another victory in the drug war.

"Bring him in."

The command fell into dead air.

He switched to the sniper's visor cam, and the slain woman's face appeared, skew-eyed, rayed with blood. Ghastly green night vision jarred then locked on a young man, the target, searching into the camera aggrieved. The sniper appeared to be kneeling before him, shuddering.

One look from the boss unleashed his personal guards. Two suits machine pistols drawn, exited the limousine.

A wrathful figure in white bodysuit laced and strapped like an asylum inmate descended the dumpster road, loping straight into the headlights long hair lashing.

"Shoot!" The boss's cry rang tinny and flat in the guards' earpieces Extremities numb, the two men staggered backward, trigger finger frozen. "Shoot him!"

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Noel charged, grimacing, and the guards dropped before him, curling into fetal distress. Plucking a radio from one of the guard's jackets, he sauntered to the boss's tinted window. Rage slid off Noel's pallid face, leaving an equable, intent stare. "Open the door."

"What do you want?"

"Same as the others."

The boss stiffened. Each of his underlings had divested all financial holdings to the last dollar, including personal homes and vehicles, and *donated* the funds to charities. Product got hosed on the spot, flushed down drains. And men who had been cutthroat managers cowered in spiderholes, returning none of his calls.

"Who are you?" The boss thumbed into his cell phone the number of an ally. "What have you done to my men?"

"My name is Noel, and I've taken Leon's place. I'm from two million years in your future. An accident stranded me here with Ny'a — the woman you shot back there."

"Are you laughing at me?"

Noel tapped the radio against his dark reflection. "Just open the door."

The boss repeated calmly, "My men? What happened?"

"For my own protection, my body is designed to excrete a compound that imprints hostile brains with the most extreme fear and submissiveness toward me. Works instantly, first whiff. Lasts a lifetime." Noel rapped the window. "Open the door."

"No."

"You have to. You're next in the strongman hierarchy. Neutralize sufficient number of alpha males in nodal positions, men such as yourself, and world history changes — our history." He knocked again. "So, come on, open up. It's for the children."

"Beat it. This car is bulletproof. You're not getting in, no matter how crazy you are. My friends will be here soon."

"My friend's already here."

Ny'a ambled into the headbeams, tunic ruffling like water, hair coils of snakes, face blood-welded.

"You thought she was dead?" Noel asked this in a stony whisper. "She's not even born."

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Ny'a stepped to the window, and the jade she clicked against the glass filled the interior with ghost light, a shimmer like the start of a migraine. And the door clacked open.

Cirrus clouds wove the blue sky like spider's silk. In his solarium office atop a corporate tower of red stone adobe, the latest strongman crossed ostrich-skin boots on a desktop of petrified wood and listened impassively to Noel's story. Unlike the half dozen security officers Noel had left cringing under desks and sobbing in stairwells, this strongman remained unperturbed.

Finely weathered as a veteran astronaut, the bald, rangy man leaned back, far enough for a shave. "The Contexture sounds to be a demiurge." He watched from behind tinted lenses that made his stare look like smoke. "You all know that word in Heavinside? *Demiurge*?"

"Deity of an order less than omnipotent," Ny'a replied with undisguised disdain for this self-possessed creature, this human accident. In claret red pant suit with flowing, Byzantine lines and tinsel-hem, she walked the perimeter of the solarium, alert for weapons. Even though Sierra Tree had cautioned that Aberrants existed, the appearance of one arrived like a beat of the world's heart, a throb of mystery, the only encounter between Noel and a dominant male that fell to pieces just like a dream. At any moment, the strongman could serenely pull a pearl-handled Colt from a drawer, explode Noel's brains out the back of his skull, and justifiably plead self-defense. "The Contexture is not divine. Only of a higher geometry. Spacetime is a shadow of Context."

"Whatever you say." The strongman held up both hands and framed a stare of smoke. "I ain't pretending to understand. But I believe. Every word. How else interpret you sitting here — and my security detail sniveling out there?" He basked in cloudshine reflections from off a sheet-glass panorama of desert buttes. Behind him, refinery stacks gasped blue flames above tableland banded in ice cream colors. "Okay. You all traveled two million years to visit me. A demiurge allowed it. As an act of compassion. Huh!" He pulled down the corners of his mouth and aimed a cloud stare at Noel, who sank deeper into his steer-hide seat, deeper into his thunderstorm-blue suit tailored from fabulously soft guanaco. "A demiurge with a heart. And you say you're not religious?"

Noel sat forward in his seat, not sure what to say now that his history

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of the future had reeled out uselessly. They had a problem. What to do about a strongman with a short circuit in the limbic brain, a congenital defect, a twisted twist of DNA that overfilled him with id and cunning unhampered by anger, fear — or conscience? "There are religious communities — " Noel began.

The strongman cut him off, " — in Heavinside. It's *all* there. I understand that. But you two. You're not religious?"

Ny'a stared bleakly from across the solarium. "Not the way you mean."

"What do I mean?"

"You mean to keep what you have." She sauntered closer. "We mean to take it away."

The strongman frowned at Noel. "She's not really human, is she?"

Noel blew a silent laugh and waved away that silly question. "Not even primate."

"I am Context, a three-space representation in timephase of Noel's inamorata." She tossed her head back and leveled a smoldering look at the Aberrant. "*Inamorata*. You know that word?"

"Sounds sexy." The strongman pushed away from his desk as she leaned in. "When anger doesn't work, you turn on the heat? Is that it?"

"You *are* different from other men." She slinked across the polished desktop, advancing comically, voluptuously. "You have no thought for aftermath."

"Could put it that way." He rose to his feet, and she rolled off the desk and softly collided with him. He put a hand to her throat and took a grip on her pulsing fragility. "And you're nothing but aftermath."

Ny'a pressed herself sensuously against the strongman, forcing him back against the sheet glass with grotesque strength. "Casuistry," she hissed through a grimaced smile, unambiguous darkness deepening in her eyes.

She tapped her jade coin against the pane as he punctured her larynx. The pulse of vacuum current coursing into her damaged body from the obol palmed against the glass blinked the electrostatic bonds of atomic silicon, and the window's surface tension burst outward.

The strongman toppled backward in a swarm of glass pebbles shaped like clear cashews, each with a tiny sun wobbling in it. And he fell the entire way down without blinking, staring hard into the infinite blue.

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Ny'a ran her fingers over the surface of her obol, feeling the imprint of Sierra Tree, last tether to Heavinside. She stood with Noel at the stoop of hell, upon a shelf of cooling obsidian above a night of incandescent lava. Rivers of fire blazed down the south flank of Mauna Loa into magma pools, and infernal fumes swept scarlet shadows through mansions of darkness.

"Compassion compels us." She didn't have to say anything else. The future they knew was lost, hidden behind massive waves of change they had set in motion here on Errth, two million years in their past. The obol, still connected to Heavinside, snagged unrelated worldlines off the worldsheet that they had rumpled, and far apart times and places touched each other. Ordovician seaweeds clogged Niagara. Club moss forests splotched the Sahara. Before a herd of sauropods trampled Champs Elysées, they had to cut the snag.

She tossed the obol overhand and it flicked like a green needle in the red night. When it plopped into 1200 Celsius molten rock, its jade casing vaporized — a spurt of light, small and brief as a match flare. The obol departed Errth twisting like smoke, and the vacuum current powering Ny'a's three-space representation in timephase sheared away.

She collapsed into his arms, and majestic thunder marched in from a dark horizon.

He knelt, cradling her head in his hands, and met the blackness of her staring eyes. Crimson vapors ghosting across starry reaches swept her soul afield.

She cants out of her body, and she is in Heavinside again. Saille sinks in evening's violet haze, blue trees and black ponds under luminous cloudstreams and straits of stars. A secret, final joy vouchsafed her since forever waits within that beauty. All she needs do is go down there, into willow coves and reefs of lavender mist.

The Contexture is there, as darkness itself. From those sockets of black light among the trees, a Presence beckons.

"Compassion flows from broken veins." The voice could be her own, except for its royal timbre. "Without your obol, death finds you everywhere. Except here."

Here is where the Contexture built her out of the records and ruins of

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Errth. From among those records, Plato speaks, *We believe, do we not, that death is the separation of the soul from the body... and the soul exists alone by itself.*

That is why she is standing here in Saille again, a ghost under the gray trees. The Contexture designed her as a body and a soul, as Plato and his kindred Indo-European sapiens would have expected.

"I cannot stay," she speaks to the indigo darkness and hears her words fall away into silence, into a subsidence of cosmic emptiness. "I belong on Errth with Noel."

"You? Or Noel's templet?" The imperial voice retreats into leaves breathing in the dark, and she tilts her face to the breathing stars and listens. "Without your obol, your purpose as a templet reaches this happy closure. Here in Heavinside. Leave Noel — and come to your secret joy."

Design or desire, she can't tell them apart in herself. And she doesn't care. "I belong on Errth now. With Noel."

"That is your Sibyl's jar. You are set free of that custody forever." The voice is so faint, merely her mind's punctuation puncturing silence. "Without your obol, you must eat for yourself, heal yourself. Even then, death arrives. Stay."

"I will live as a pouch of hungry ghosts." She loses the frail grip of her voice in the congealing dark. Instantly, she returns to where Noel laid her down with her backpack under her head. He knelt over her, blowing resuscitating breaths, strenuously working the basket that held the meat of her heart. Yards away, mephitic fumes flew past in air full of noise.

A sulfurous stink nailed her sinuses and hammered her awake. She sat up gasping. Joy pierced her keen as the caustic air, and she climbed upright with Noel, who cried and laughed, the demented happiness in his face smeared by scarlet heat.

They limped away from the lava flow, leaning on each other, staggering toward a dawn that lay in the east like a cold gray stone. The Contexture observes them from 5-space, where time is pure as a snowflake. Fractal pathways crystallize across the cracked landscape. Some lead into a billowing dawn and toward methane and sulfur dioxide that vent invisibly from crusty fissures and unravel into the atmosphere. A shift in the wind wafts death over them in the Many Worlds, and their bodies lie hugged together among desolate rocks.

That razor line through the black, melted landscape is a highway, and

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their rental car waits there. Ghosts of mist and steam cross the road slashed by horizontal rays of sunlight. The Contexture peers into the glare, searching for other haphazard pathways over the rugged terrain, less direct, less probable courses Noel and Ny'a might have followed back to their vehicle. And there they are, on the sunrise plain in an unparalleled universe, invisible gas scrolling away from them. They hobble happy and frightened across volcanic flats.

The cinder surface of a magma lake fractures, steaming softly underfoot. Shattered plates buckle beneath their weight. Clutching each other, they move forward on this demonic pavement, terrified yet sharing encouraging looks.

The Contexture observes them and their burden of emotion, and sees how, for all their heartfelt hope, uncertainty slows them down, endangers them. They are more mortal for not knowing. And more beautiful. It learned this from us. ☙

COMING ATTRACTIONS

SURE LÁZARO WAS BROKE, but he still wasn't interested in rolling drunks, not even rich belligerent Academy chilito *drunks.* Thus starts our June cover story, Marta Randall's "Lázaro y Antonio." In this evocative story, you'll get to explore The Curve, learn about Fibs, and meet two of the more memorable characters to cross our pages in a while. (Want to take a guess at their names?)

Alex Irvine also returns next month, this time with a high fantasy adventure. In "Wizard's Six," Paulus is hunting the apprentice Myros. What Myros has done, and what Paulus must do, makes for a potent and haunting tale.

Other stories coming soon include Charles Coleman Finlay's SF caper, "An Eye for an Eye," M. K. Hobson's look at the future of the boardroom, "PowerSuit™," Sheila Finch's story about the origins of the Lingster guild, "First Was the Word," and new stories by Albert E. Cowdrey, Frederic S. Durbin, Esther M. Friesner, Sean McMullen, and James Stoddard. We've also got a new novella by Lucius Shepard coming soon. Do it by mail or do it online, but subscribe now so you won't miss a word of it!

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CURIOSITIES

THE UNCELESTIAL CITY, BY HUMBERT WOLFE (1930)

BEING forgotten is a common novelistic fate. Humbert Wolfe's afterlife fantasy *The Uncelestial City* has sunk so far into oblivion that no one remembers it's a fantasy. One throwaway quotation survives, usually misquoted and attributed to Hilaire Belloc or the prolific Anon:

> You cannot hope
> to bribe or twist,
> thank God! the
> British journalist.
>
> But, seeing what
> the man will do
> unbribed, there's
> no occasion to.

The grim truth is that *The Uncelestial City* is a book-length posthumous fantasy *in verse*, whose high point of sprightliness is that aphorism. Perhaps sensing that the public will tolerate only so much rhymed narrative, Wolfe added fragments of prose "Argument":

"The late Mr. Justice Crayfish finds himself ascending a flight of steps to a gate. He recognizes the gatekeeper as one whom he has known and loved once...."

Beyond the gate, Crayfish sees the Celestial City, but must first retrace his steps through the Uncelestial City of his own past life. The gatekeeper, an allegorical Christ/Orpheus, fiddles a musical accompaniment while the judge relives career highlights. Passing sentence of death, for example, and steering the jury to find an anti-war poet guilty under England's ludicrous blasphemy laws.

Suitably harrowed, Crayfish reaches the exit to the Celestial City on its hill. The road has been long and purgatorial, paved with high-minded doggerel, and (alas) it fades rapidly from memory. Only that gag about newspapermen remains.

The London publisher was Gollancz, later famous for its sf.

— David Langford

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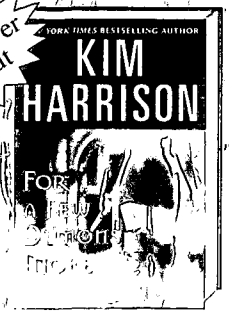

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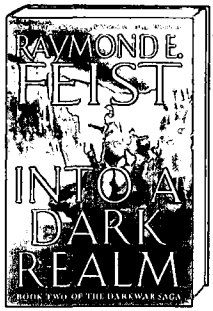

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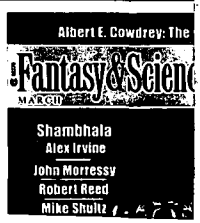

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